Not the way to San Jose Scandal over $8 million VoIP contract holds lessons for municipal IT buyers. PAGE 8.

Spy threat Insidious scourge of the 'Net, spyware has IT shops turning to new tools to fight back. PAGE 21.

NetworkWorld

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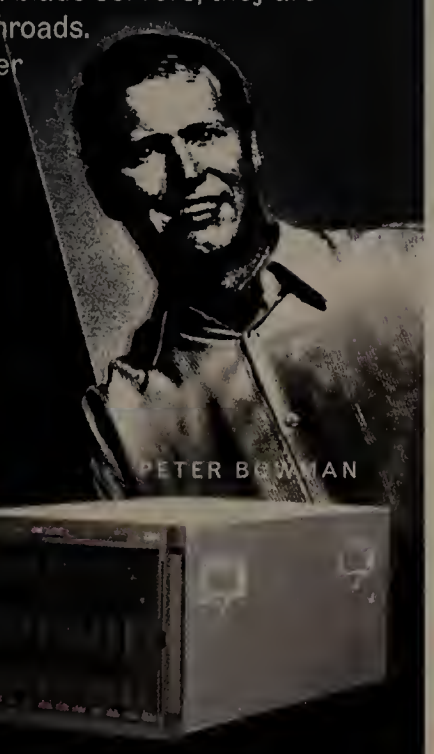
August 16, 2004 ■ Volume 21, Number 33

Technology INSIDER Blade servers

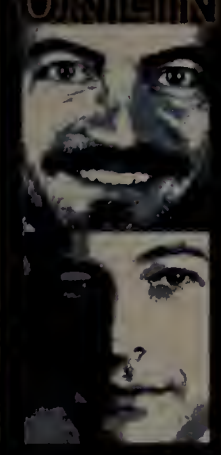
With hardware vendors such as IBM, HP and Sun throwing their weight behind blade servers, they are poised to make significant inroads. Cutting-edge users like Peter Bowman, CIO of Nations Holding Group, are reaping the benefits. Page 35.

Clear Choice Test: We tested blades from IBM, HP and RLX for raw performance and management features. Page 37.



NetworkWorld CLEAR CHOICE

ONLINE



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Face-Off: Dave Driggers, CEO of Verari Systems, says blades are a perfect fit for today's data center. Not so fast, counters Jay Adelson, CTO of Equinix. There are still questions about reliability and cost. DocFinder: 2430

Buyer's guide: Blade servers DocFinder: 3326

PHOTO BRUCE HERSHEY

NEWSPAPER ■ $5.00

Windows users put on defensive by SP2

■ BY JOHN FONTANA

Companies that use Microsoft's Automatic Updates feature will have to install desktop blockers to thwart the delivery and installation of Windows XP Service Pack 2 this week.

With Microsoft having changed its policy to deliver service packs through Automatic Updates, users that have the mechanism activated now must defend their desktops in order to have time to complete testing.

IT departments are going through rigorous testing, at Microsoft's request, to figure out which applications XP SP2 might break.

IT executives inundated Microsoft with complaints about the automatic upgrades, which forced Microsoft to create an ad hoc team that worked five days to devise a solution. The team came up with a registry key, which prevents

See Microsoft, page 14

FDA reads riot act to device makers

■ BY DENI CONNOR AND ELLEN MESSMER

AUSTIN, TEXAS — Amid growing concern about security in hospital patient-care systems, the federal agency that regulates medical devices last week announced a get-tough policy to improve equipment safety.

Medical devices such as ultrasound and radiology systems often rely on commercial off-the-shelf software, including Windows and Unix, that requires continuous patching for security. But increasingly, hospital IT administrators are voicing complaints that manufacturers are failing to patch Windows-based equipment quickly or at all, which then fall prey to computer worms. This not only disrupts hospital operations but poses a potential safety hazard to patients.

Hospitals are calling on the U.S. Food and Drug Administration

■ **Microsoft addresses medical-device issues. Read Ellen Messmer's Security Notes column online at www.nwfusion.com, DocFinder: 3361.**

See FDA, page 51

A Wider Net

DAN VASCONCELLOS

Still no word from ET

Five years and 5 million networked PCs find no sign of extraterrestrials. They'll keep looking.

■ BY PHIL HOCHMUTH

Mulder and Scully made it look so easy. An alien hunt has been underway for more than five years using the world's largest grid supercomputer — 5 million Internet-linked PCs — as part of a project called SETI@Home. The project, run by the University of California Berkeley, harnesses unused CPU cycles to comb through deep-space radio noise, searching for signals from extraterrestrials.

See SETI@Home, page 52

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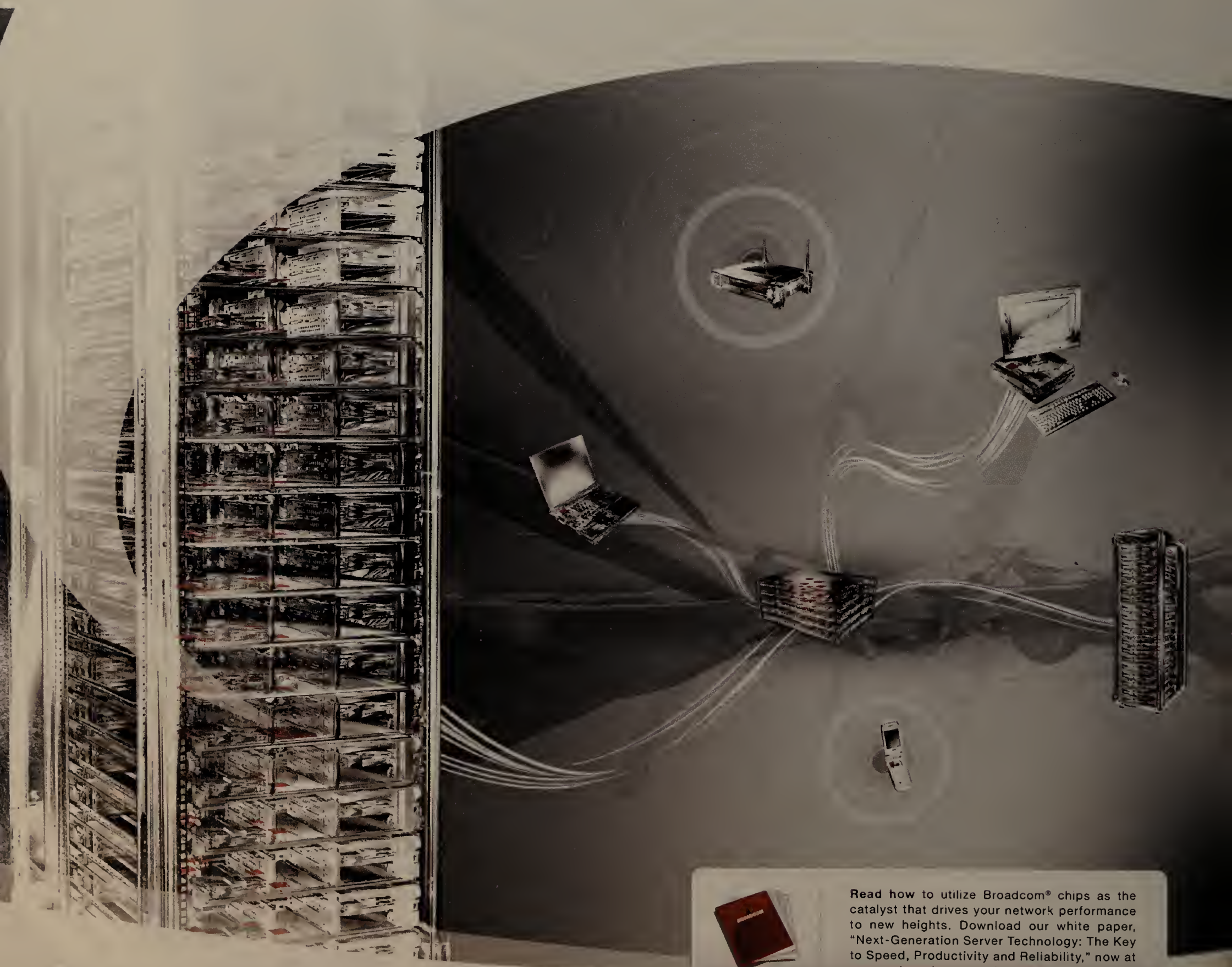

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[1]Source: IDC Worldwide Quarterly Server Tracker, Q2 2003

8/16/04

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Technology INSIDER Blade servers

In this Technology Insider, we talk to cutting-edge users like Peter Bowman, CIO of Nations Holding Group, who are reaping the benefits of blades. **Page 35.**

CLEAR CHOICE TEST

We tested blade server platforms from IBM, HP and RLX for raw performance and management features. IBM is our overall winner, but the HP and RLX blades had a strong showing. **Page 37.**

Online Face-Off: Dave Driggers, CEO of Verari Systems, says blades are a perfect fit for today's data center. Not so fast, counters Jay Adelson, founder and CTO of Equinix. There are still questions about reliability and cost savings. See **www.nwfusion.com, DocFinder: 2430.** Also check out our buyer's guide at **DocFinder: 3326.**

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Call for Nominations: 2004 Network World Reader-Recognition Awards

Send in your choices for the 2004 Extended Enterprise Innovator Award and the 2004 User Excellence Award.
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Columnist Keith Shaw says it's a cool tool but wasn't exactly plug-and-play.
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News Bits

Big Blue bulks up

■ IBM last week said it's hiring a lot more employees than originally planned. The vendor boosted its forecast for the year from 10,000 up to 18,800 new hires, two-thirds of whom are destined for IBM's global services division. Driving the hiring spree is growth in areas such as Linux services, grid computing and business transformation services. The most popular position being filled is consultant, followed by IT architect, software engineer, sales staff and project manager. IBM expects to close the year with more than 330,000 employees — its largest head count since 1991, when the IBM population topped 344,000.

Leucadia gets green light on MCI

■ The Department of Justice will not stand in the way of Leucadia National if it decides to buy at least 50% of MCI's stock. Last week the federal government let a deadline pass without action, essentially letting the companies move ahead with any stock purchase plans. Leucadia, a holding company, sought permission in July to purchase at least 50% of MCI's stock. But at press time Leucadia has yet to make a formal offer to take over MCI or buy a large chunk of the company's stock. If Leucadia does start a hostile takeover bid, MCI can activate its "poison pill." In April the company adopted a Shareholders Rights Plan, which lets MCI make common stock available to its shareholders at a reduced price if another company acquires more than 15% of MCI's stock. This would make the acquisition more expensive for the acquirer.

HP sacks 3 execs after weak sales quarter

■ HP fired three major sales executives last week, including former server group head Peter Blackmore, in a management shakeup after a disappointing quarter for HP's server division. Blackmore was executive vice president of the Customer Solutions Group, which was formed last December to manage direct sales to enterprise and public sector customers worldwide. Jim Milton, CSG senior vice president and managing director of the Americas region, and Kasper Rorsted, CSG senior vice president and managing director for the Europe, Middle East and Africa region, also were dismissed. Chairman and CEO Carly Fiorina announced the changes in an e-mail to HP's employees, which was then sent to the media. HP's Enterprise Servers and Storage Group suffered through a painful second quarter, Fiorina said in HP's second-quarter earnings conference call. (See more on HP's plans, page 10.)

"OK, OK, good — I now understand what you do all day. Now these two guys can pack everything up and ship it to India."

Layer 8

We outsource the captions to you in our Weekly Caption Contest. Follow the lead of our latest winner, Bob Strusa, by sending in your caption. New contests start every Monday at www.nwfusion.com/weblogs/layer8/

■ TheGoodTheBadTheUgly

Justice served. A San Diego company called D Squared Solutions has managed to avoid a courtroom joust with the Federal Trade Commission by agreeing to no longer send pop-up ads to consumer PCs. What were they pitching? . . . A pop-up blocker. ➤

No rest for the wicked. Turns out spammers — and the ISPs that do battle with them — are weekend warriors. According to e-mail marketers Return Path, the bulk of spam is sent between 10 a.m. and 2 p.m. on Saturdays and Sundays. ISPs respond by tightening spam filters during those time periods, meaning messages are 10% less likely to find their intended in-box, the company says.

Fear grips Valley. On average, 18% of Americans fear losing their jobs, according to a July survey by staffing firm Hudson Highland Group. In Silicon Valley, that number is 27%. Guess the tech recovery has a ways to go yet.

Survey: 86% of spam starts in U.S.

■ Almost 86% of spam sent to 1,000 corporations between May and July came from U.S. spammers, according to a survey by e-mail security tools vendor CipherTrust. While U.S. IP addresses made up only 28% of the spam-sending addresses in CipherTrust's survey, those U.S. addresses sent out more unsolicited commercial e-mail than spammers from other nations, according to the company. In contrast, nearly 29% of the IP addresses sending out spam during the three-month survey were in South Korea, while only 3% of the spam came from there. The survey, which sampled about 5 million pieces of spam sent to 1,000 CipherTrust customers, runs counter to some other surveys and some critics of the CAN-SPAM law, who suggested a U.S. law would have a limited effect because of the amount of spam that comes from outside the U.S.

Teen faces jail term for spreading Blaster

■ A 19-year-old pleaded guilty in a Minnesota federal court on last week to spreading the W32.Blaster-B worm over the Internet. Jeffrey Lee Parson of Hopkins, Minn., said he was responsible for creating and unleashing the worm, which affected thousands of computers worldwide. He faces one count of intentionally causing or attempting to cause damage to a protected computer in connection with the release of the worm. Parson could face between 18 and 37 months in prison and pay millions of dollars in fines. Sentencing is scheduled for Nov. 12. Parson was tracked down last year by a joint federal task force that involved members of the FBI and the Secret Service.

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Cisco dampens growth prospects despite record Q4

■ BY JIM DUFFY

The holidays might be a little less bright this year if Cisco's financial outlook is any indication.

The company's "record-breaking" fourth quarter was tempered by a caution going forward as customers rein in spending on network equipment because of a weak economy and election year uncertainty.

Cisco recorded the highest net income and earnings per share in its history for the fourth quarter that ended July 31, but the company gave a downcast preview for the first quarter of fiscal 2005, citing lessened optimism and decreased spending among customers, mainly because of macroeconomic factors such as the gross domestic product (GDP).

"Whenever the GDP increases or decreases, there's a corresponding [response] in capital spending," says Cisco CEO John Chambers.

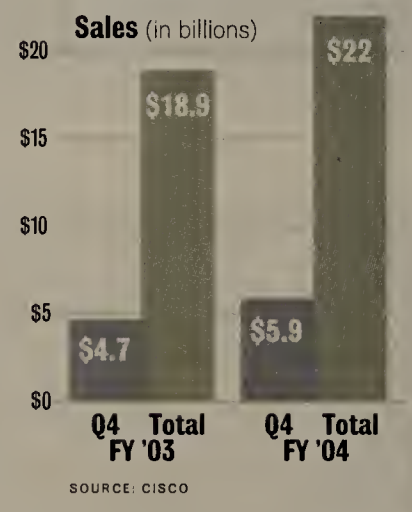
Chambers says Cisco bases its own guidance on that of its customers. If they are a little more cautious in their optimism on their business prospects, he says, so is Cisco.

Cisco expects revenue to be flat to up only 2% for the first quarter of fiscal 2005, which began Aug. 1. That falls short of estimates from some analysts, such as UBS Warburg, which forecasted Cisco's revenue to increase 3% in the first quarter.

"Management suggested that corporations have become a bit more cautious from a quarter ago, suggesting a more moderate growth outlook than when Cisco entered the quarter," Nikos Theodosopoulos, an analyst at UBS Warburg, wrote in a bulletin. "Our own checks with networking industry salespeople also suggest a slowing outlook going into the second half of the year than a few months ago."

Sales up

Despite increased sales, Cisco has concerns about maintaining momentum.



SOURCE: CISCO

The recent indicators of a slowdown might counter analyst research released in the first half of this year that generally showed an IT spending increase of 5% or more by companies in 2004 over 2003.

"You just see a lot of projects postponed" because of the economy, says Zeus Kerravala, an enterprise analyst for Detwiler, Mitchell, Fenton & Graves. "People are trying to get a better handle on what inventory they have and how to make the stuff that they have work better vs. buying new stuff."

Kerravala says users are waiting until after the election to re-examine network investments.

"The uncertainty of what people are seeing in the economy right now, and an election coming up, has just made people a lot more cautious," he says. "It's safer to make no decision than a wrong decision."

Cisco didn't make many wrong decisions in the fourth quarter. The company recorded net sales of $5.9 billion, compared with $4.7 billion for the fourth quarter of fiscal 2003, an increase of 26%. Revenue was up 5.4% from the third quarter of fiscal 2004.

Net income, excluding certain charges, was $1.5 billion, or 21 cents per share, a penny better than the 20 cents per share that analysts expected. This compares with net income of $1.1 billion, or $0.15 per share, for the fourth quarter of fiscal 2003, and net earnings of $1.4 billion, or $0.19 per share, for the third quarter of fiscal 2004.

For the year, Cisco posted net sales of $22.0 billion, compared with $18.9 billion for fiscal 2003, an increase of 16.8%. Pro forma net income was $5.3 billion, or $0.76 per share, compared with $4.3 billion, or $0.59 per share, for fiscal 2003. ■

San Jose scandal highlights issues in government buying

■ BY PHIL HOCHMUTH

The scandal resulting from collusion between Cisco and the city of San Jose on an $8 million VoIP installation highlights how the rules differ for IT buying in the public and private sectors.

With taxpayer money on the line, IT executives from local, county and state governments are under a microscope designed to elicit maximum value for their constituencies while avoiding appearances of back-room dealings.

A report released last week from the San Jose city auditor showed impropriety in the city's selection of Cisco for an $8 million converged voice/data network for the new city hall. The auditor's report found that Cisco helped city IT staff design and plan the network even before the contract was put out to bid, and that only network integration firms that resold only Cisco gear were allowed to bid.

"In the private sector, it's easy to get things done quickly in [IT]. In the public sector, you want to be fair and responsible to the taxpayers."

Sheng Guo
CTO, State of New York Unified Court System

As a result, the contract bidding process will be restarted, and vendors offering competitive technologies will be allowed to bid. This could result in delays for the $388 million city hall, slated to open next spring. Last week, San Jose CIO Wandzia Grycz resigned under pressure.

"The other issue" was that "Cisco had been interacting with our staff during the procurement process," which violates the city's municipal code, says Edward Shikada, deputy city manager city of San Jose.

As a result of the auditor's finding, the IT staff that communicated with Cisco during the bidding process will not be allowed to work on the convergence project.

Additionally, the convergence aspect of the project created more legal gray areas, Shikada says. While the city had moved towards formally standardizing on Cisco data gear, he says, that process wasn't completed, and there was never mention of making Cisco a standard telephone vendor. The city has codes for data and voice technology procurement, but not converged voice and data from the same vendor.

IT executives from state and local governments say that keeping the process for IT contracts open, and defending technology choices through research and testing, are keys to the balancing act of running good networks and maintaining public trust.

"In the private sector, it's easy to get things done quickly in [IT]," says Sheng Guo, CTO for the New York State Unified Court System. "In the public sector, you want to be fair and responsible to the taxpayers."

Contracts for most large technology projects in cities and states must be put up for bid and advertised in newspapers or government publications.

"We usually have to pick the lower-cost bids," Guo says. This bidding process also can be long, he says, adding that "six months is a miracle, and nine months if you're lucky" is to be expected to go from bidding to the start of work. "A year is not unusual."

Standardizing on one vendor's products can be done when the right case is made, other IT executives say.

"You have to be careful to show that there is a business need or advantage for standardization," says one executive from a midsize city that uses all Cisco switches and routers. "If you already have an installed infrastructure with a certain vendor, it's easy to show the advantages of standardizing," says this executive, who asked not to be named.

Guo agrees with this strategy.

"You have to create a proposal showing that [one vendor's] products can perform better at a lower cost — not only on the equipment side, but in terms of staff training and management," he says. The court system recently standardized on Nortel switches and routers, but uses some Cisco optical routing equipment for connecting courthouses over long distances.

In the city of Burbank, Calif., Extreme Networks switches are the standard, and Compaq servers, laptops and PCs are used exclusively in city offices and server rooms.

"It's one thing if I do my homework and I say, 'Given our budget and our resources, [Compaq] will work best,'" says Perry Jarvis, network operations manager for the city of Burbank. "But Compaq didn't come in here and tell us what type of PCs and servers to buy."

"Lots of people buy all [single-vendor], but the key is in the way you do it," Jarvis says. "If you evaluated five products, and your tests come up with one as being the best, that's how you make a case for standardization."

In the case of San Jose, the city already had an end-to-end Cisco network for routing and switching from a contract Cisco won in 1997, City Manager Shikada says.

While the municipality had explored the legal aspects of making Cisco the standard data provider for the city, not all the legal steps were made to allow that. As a result, the city still was legally required to look at multiple vendors when making large purchases for new projects. ■

More online!

Read more about the red-tape public sector organizations, and even some private companies are spinning when it comes to buying IT gear.

DocFinder: 3360

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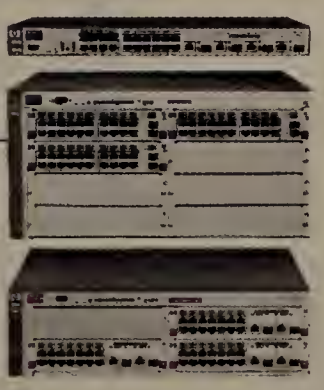

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Wireless vendors try defining MIMO

■ BY JOHN COX

Two developments last week illustrate the growing frenzy of interest in adopting a radio technology that promises to boost wireless LAN throughput from about 20M bit/sec today to at least 100M bit/sec.

First, a second industry group has filed a proposal, based on Wi-Fi technology called Multiple Input Multiple Output (MIMO), with the IEEE task group charged with creating a 100M bit/sec WLAN standard.

Not waiting for that standard, wireless vendor Belkin unveiled what are likely to be the first available MIMO-based WLAN products, with throughput of 40M to nearly 100M bit/sec.

Last Friday was the deadline for proposals to the IEEE 802.11n group charged with defining the physical layer standard that will make the high-throughput WLAN possible. Sixty-two "intent to present" notices were filed, although some of those were for multiple proposals from the same vendors.

Some observers expect a first draft by mid-2005, with a final standard in late 2006 or early 2007. Products likely would emerge soon thereafter.

MIMO has emerged as the most likely way to dramatically boost WLAN throughput. It uses two or more antennas to transmit and receive data that is sent over multiple pathways on a single channel, multiplying the channel's data capacity.

Last week, World-wide Spectrum Efficiency (WWISE) outlined a MIMO plan it submitted to the IEEE. The vendor group proposes, as the mandatory part of an 802.11n standard, using the existing 20-MHz channel structure that is almost universally adopted, two MIMO antennas on either end of the link and media access control layer changes to boost the throughput on a single channel to 135M bit/sec.

WWISE members are silicon vendors, including Airgo, Bermai, Broadcom, Conexant Systems, STMicroelectronics and Texas Instruments. Airgo is the only vendor to ship a MIMO chipset.

Last month, another vendor group, TgnSync, with Agere, Atheros, Intel, Sony and several others, unveiled their own 802.11n proposal (see www.nwfusion.com, DocFinder: 3354).

Belkin decided not to wait for the 802.11n standard to be finalized. Last week, the vendor announced it will ship in October the Wireless Pre-N Router and the Wireless Pre-N Notebook Network Card, both based on Airgo's MIMO chipset and aimed at consumer and small-business markets.

Belkin says its tests show the new products deliver much higher throughput at longer distances compared with 802.11g access points. At 30 feet, the 802.11g access points delivered 15M to just less than 20M bit/sec. The Belkin MIMO router showed nearly 40M bit/sec, the company says. At about 130 feet, the 802.11g products dropped to 1M to 6M bit/sec, most at less than 5M bit/sec. The MIMO router dropped also, but to about 27M bit/sec, Belkin says.

Prices will be more expensive than Belkin's current 802.11g products, a Belkin spokeswoman says. The price for the MIMO router will be $179, and the notebook adapter will be priced at $129. By contrast, the Belkin 802.11g Wireless DSL/Cable Gateway Router costs $90. ■

The MIMO clash

Two vendor groups offer proposals to IEEE 802.11n task group for next-generation WLAN standard.

The goal: Boost WLAN throughput to at least 100M bit/sec.

Leading technology: MIMO.

How it works: Two or more transmitting/receiving antennas, sending data over multiple paths on a single channel.

Group:	TgnSync	World-wide Spectrum Efficiency (WWISE)
Members:	Agere, Atheros, Intel, Nokia, Sony, others	Airgo, Bermai, Broadcom, Conexant, STMicroelectronics
The basics:	Targeting 250M bit/sec, 40MHz channel	Targeting 135M bit/sec, 20MHz channel

Differences: Channel size, mandatory throughput rate, intellectual property terms.

Correction

■ The story "The weatherman's WAN man" (July 26, page 48) should have said that one of NOAA's tasks is to monitor carbon dioxide. The global projection system is called Science on a Sphere.

HP focuses on enhanced virtualization

■ BY JENNIFER MEARS

Troubled by its underperforming storage and server systems business, HP plans this week to unveil new server virtualization capabilities and an updated Unix operating system that it says will boost performance and make it easier for users to move to its Intel Itanium line of servers.

HP plans to use its HP World user conference in Chicago to highlight the new technologies, which bring Unix virtualization and management features to its Itanium servers. HP has announced plans to phase out its PA-Risc and Alpha servers and standardize on the Intel platform.

The server news comes a week after HP announced its third-quarter results showing increased revenue but disappointing performance in its Enterprise Servers and Storage Group. Chairman and CEO Carly Fiorina estimated that issues affecting the servers and storage group cost the company $400 million in revenue and $275 million in operating profit.

Fiorina said three issues have dogged the server and storage group during the quarter: a less-than-smooth migration to a new order and supply-chain management system in the U.S., aggressive discounting and poor channel management in Europe, and significantly lower-than-expected storage revenue.

Several sales executives were let go as a result, including former server group chief Peter Blackmore, who was executive vice president of HP's Customer Solutions Group.

HP intends to invigorate its server business this week with announcements including updates to HP-UX is support for PA-Risc-based HP 9000 servers, meaning that a single operating system can run across both the HP 9000 and Integrity servers. In addition to providing an improvement in performance of up to 25% for users upgrading from HP-UX 11i Version 1, the updated operating system will enable common administration across HP 9000 and Integrity servers, and will maintain source and data compatibility when moving to the Itanium systems.

Further, HP's high-availability software, Serviceguard, running on HP-UX 11i Version 2 will let users group HP 9000 and Integrity servers into one cluster.

"HP is moving towards parity with the Integrity line and the PA-Risc line," says Jonathan Eunice, president and principal analyst at Illuminata. "They're in this transitional period between the two platforms, and [the update brings] 97% or 98% equivalency so essentially all the important things you'll need to migrate between the machines will be there."

In addition, the company plans to announce updates to its Virtual Server Environment (VSE), a virtualization toolkit based on its HP-UX workload manager that gives users the ability to pool resources that can grow and shrink according to application demands. One announcement this week will be that VSE will run on multiple operating systems, meaning that the virtualization features previously available only on HP-UX now will run on Linux.

HP also plans to announce a final update to its Alpha line of servers, which it plans to stop selling in 2006. Faster processors will be available for the AlphaServer ES47 system, which scales to two processors, the AlphaServer ES80 system, which scales to eight processors, and the GS1280 system, which scales to 64 processors. HP executives say customers will get faster systems for the same price as today's boxes.

Some users, however, are moving to the Integrity servers now.

BECU, a credit union in Tukwila, Wash., recently completed the move from Alpha Tru64 systems running Oracle to a cluster of Integrity boxes. Scott Wolfe, IT enterprise architect for BECU, says the initial transition was tough because of the need to get up to speed with HP-UX, but the credit union already is seeing benefits.

"We've been able to reduce our runtime for batch processes by about 40%," he says. ■

HP World doings

More than 7,000 customers and partners are expected to attend HP World where HP will unveil updates to its server and storage offerings that will be rolled out over the next 12 months. Among them:

- HP-UX 11i Version 2, which will run on both PA-Risc and Itanium-based servers.
- HP Global Workload Manager, enabling automatic resource allocation across multiple servers running HP-UX or Linux.
- HP Integrity Virtual Machine, which will let users partition Unix and Linux servers into as little as 1/20th of a CPU and have virtual machines share I/O resources.
- HP Serviceguard, enhanced to reduce failover time to 5 seconds.
- Secure Resource Partitions, giving users the ability to run multiple applications under a single operating system image.
- HP-UX Virtual Partitions for HP Integrity servers, bringing vPar capabilities from PA-Risc servers to Itanium systems.
- HP StorageWorks EVA3000 Starter Kit, a 2G byte Fibre Channel storage-area network bundle to ease SAN implementations.

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Oracle boosts business apps

■ BY ANN BEDNARZ

Oracle this week is expected to unveil new versions of its CRM applications designed to enable easier and tighter collaboration among the players involved in a corporate sales cycle, from field agents and marketing personnel to fulfillment teams and channel partners.

One new element among the CRM modules in Oracle's E-Business Suite 11i.10 is analytical software called Audience Workbench. With it, a marketing manager can query customer information repositories to find the most promising up-sell targets and develop associated marketing campaigns. Then as marketing hands off promising leads to sales personnel, Workbench provides tools to create tailored sales proposals.

Also new to the suite is Oracle Sales Coach, which leads sales representatives through corporate-approved steps to close a deal, providing collateral materials and automatically capturing data for future sales documents.

On the integration front, Oracle embedded its incentive compensation software within its quoting application so reps can see early in the sales quoting process how particular product offerings and discounts would affect their projected compensation.

These upgrades come as the CRM industry struggles to regain some of its lost luster. After three years of declining license revenue, the CRM software market is expected to grow by 3.5% this year to $2.4 billion, Gartner says.

IDC says Oracle's share of worldwide CRM application revenue is 4.4%; it trails Siebel Systems (11.9%) and SAP (6.7%). However, Oracle has come a long way toward closing the technology gap between its wares and competing products, says Ian Jacobs, an analyst at Current Analysis.

Oracle's business process-driven approach, which links CRM functionality with other elements of its E-Business Suite, is a good one, Jacobs says. "In salesforce automation, it makes great sense to have strong contracts and order management modules tied into the CRM piece." ■

Alcatel switches gain security support

■ BY PHIL HOCHMUTH

Alcatel this week is expected to enter the fray of switch vendors looking to help users block viruses and network attacks.

On tap is a new Host Integrity Check software bundle from Alcatel and Sygate that can be used to check the security of PCs and can quarantine virus-infected clients into a secure network segment.

Alcatel also is releasing Automated Quarantine Engine, which works with intrusion-detection system (IDS) products to identify network threats and to shut off or contain a network attack through switch hardware.

Alcatel's stackable OmniStack 6600 switches and its modular 7700- and 8800-series products will use a combination of 802.1X authentication technology and APIs from Sygate to block a virus-infected PC from accessing a corporate LAN. This product package requires Sygate's Host Integrity Server, and anti-virus and client management software from Network Associates, Symantec or Trend Micro on the client side.

When an end user logs on, information about the PC is sent to a Sygate server, which checks anti-virus data profiles produced by client software on the PC. If end users are not up to date, they can be sent to a quarantine virtual LAN (VLAN) segment, which must be pre-configured on the Alcatel switches.

Alcatel is adding IDS and anti-virus capabilites to its OmniSwitch product lines.

This technology is installed at Abilene Christian University in Texas, where it will be put to the test next week when students return for the fall semester.

"The Blaster virus really rocked our world in the first few days last fall when kids returned to school," says Bob Neville, network director at the university. He says he and his staff spent days running around campus, physically tracking down students with infected machines and disconnecting them from the network.

Judging from tests he's conducted on campus, the Alcatel products "will give us some time to deal with network [viruses] and intrusions before they proliferate and minimize the damage," he says.

Under the system Neville has set up, users with infected machines would be notified of their infected status via a Web page message. The users then would be sent to a quarantine VLAN segment where they are kept from spreading the virus. This network segment also will host a virus and software patch server where users can get updated anti-virus definitions and have their machines scrubbed before getting back on the network.

Alcatel's Automated Quarantine Engine adds the ability to enforce polices on network switches based on information gathered by third-party IDS equipment. The server-based software can communicate with IDS products from Fortinet, and open source SNORT_IDS servers and appliances, to identify network attacks and shut down the source of the attacks. When an IDS node senses an attack, Automated Quarantine Engine is notified and tells Alcatel switches to react, based on pre-configured policies. Access control lists can be turned on to block the traffic, or to isolate traffic into separate VLANs. Automated Quarantine Engine also can tell switches to shut down network access based on IP address or media access control address information on the attacking machine, Alcatel says.

The Alcatel products come after recent announcements of similar capabilities from Enterasys Networks and Cisco. Enterasys' Trusted End System technology also uses Sygate products to identify untrusted endpoints via 802.1X messaging. It also includes server software for creating policies to deal with unsecure clients by shutting down access on Matrix LAN switches, or shunting traffic to secure VLANs.

Cisco's Network Admission Control program uses software from leading anti-virus vendors to inspect client PCs. This lets a Cisco router with a special IOS load deny network access to unsecure clients. Cisco plans to announce the ability to quarantine untrusted clients via 802.1X and secure VLANs on its Catalyst switches in 2005.

The Host Integrity Check supports Windows 2000 and XP clients, and will support Apple Macintosh and Linux clients next year. No additional hardware or software from Alcatel is needed, but Sygate's Host Integrity server, which costs $35 to $85 per seat, is required.

Pricing for Automated Quarantine Engine starts at $8,000 for midsize companies of around 500 to 1,000 users. The FortiGate products Alcatel will offer will range from $700 for small offices to $30,000 for an enterprise-class FortiGate 3600 system. ■

McAfee upgrades security management software

■ BY ELLEN MESSMER

McAfee next week plans to ship an updated version of its anti-virus management product, ePolicy Orchestrator, that adds capabilities such as intrusion-prevention management and rogue-computer detection.

Using ePO 3.5, security managers will be able to deploy McAfee's host-based intrusion-prevention system (IPS) Entercept out to desktops and servers, and receive event information on attacks.

"The ePO will have the ability to generate reports related to Entercept, but the ability to do configuration changes on Entercept won't be until the future," says Steve Crutchfield, McAfee's director of product marketing.

McAfee is aiming to transform ePO, which includes a console, server and desktop agents, into more than an anti-virus and IPS management tool.

For instance, ePO 3.5 will be able to do "rogue-system detection" on the network to find PCs that may not yet have been placed under ePO management control," Crutchfield says.

The updated version also will be able to check Windows-based desktops and servers to determine whether they have updated software patches. However, ePO is not designed to apply patches, only alert managers about patch status.

Halifax Bank in Scotland intends to use ePO's rogue-system detection and patch-detection capabilities to locate computers on its network that might not be abiding by security policies. By finding non-compliant systems and potential vulnerabilities using ePO 3.5, the bank might be able to prevent costly business disruptions caused by worms and other attacks, says Richard Fry, the bank's malware defense technical specialist.

The ePO management umbrella is widening in other ways. According to Crutchfield, ePO now will be able to import information about new computers and users from Microsoft Active Directory. Although ePO had been limited to managing NetWare- and Windows-based anti-virus software, the updated console now will be able to manage McAfee's anti-virus products for Linux and Macintosh.

Pricing for ePO, which comes as part of the McAfee Active VirusScan software suite, starts at $38 per user for up to 100 users. ■

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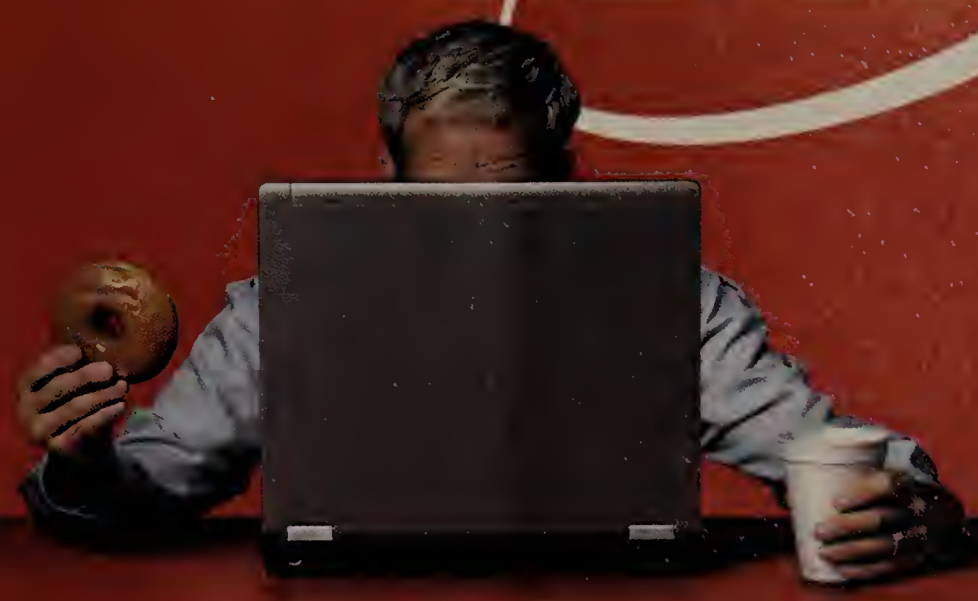

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NW/NC 8/04

Microsoft
continued from page 1

Automatic Updates from downloading XP SP2, and a group of three mechanisms for delivering the key to desktops (see graphic, right).

Now users have load the registry key onto desktops before Automatic Updates kicks off this week and begins deploying XP SP2.

"It has been confusing in the sense that when Microsoft first announced its intentions of pushing out SP2 to Automatic Updates-enabled computers, it did not announce that it would provide tools to temporarily block delivery of SP2," says Chris Shilt, system administrator for The Relizon Company, a document, marketing and billing service provider in Dayton, Ohio. He has 2,000 desktops with Automatic Updates activated.

"Microsoft should have made the announcement earlier," Shilt says. "The decision to post these tools is a realization that some of their customers are using Automatic Updates to patch systems."

Company officials acknowledge they were caught off guard.

"I was astounded by the number of companies that use [Automatic Updates], which is great," says Barry Goffe, group product manager for Windows product marketing at Microsoft. The company's "Protect Your PC" campaign encourages users to activate Automatic Updates. "Some companies had tens of thousands of machines with [Automatic Updates] turned on."

A recent survey by Web site NTBugTraq shows that 24% of Windows users employ Automatic Updates to get patches.

Relizon's Shilt decided to use Automatic Updates as an interim step as the company completed deploying System Management Server (SMS) 2003, which manages patch deployments among other features. He favored Automatic Updates because he lacked the resources to deploy a server running Windows Server 2003 with a free add-on called System Update Services (SUS). The add-on sits behind a firewall and automates the acquisition of patches and manages deployment internally using Automatic Updates.

But patch management tools such as SUS and SMS or similar tools from third-party vendors aren't failsafe because many companies have handfuls of remote sites or mobile users that fall back on Automatic Updates. The only way to ensure XP SP2 isn't installed by end users is to deny them administrative rights on their own PCs, which administrators do.

"We have some users with unmanaged desktops so now I can use these new tools to make sure they don't get the XP service pack," says Jeff Allred, manager of network services for the Duke University Cancer Center in Durham, N.C. "But didn't we hear when XP originally shipped that there would be no more [operating system] code in service packs? I guess that has gone by the wayside."

In addition, as recently as December Microsoft said it would not deliver service packs using Automatic Updates. But the company abandoned that rule "fairly recently" for XP SP2, Microsoft's Goffe says. He says Microsoft preferred to focus on giving consumers the easiest possible route to acquire the security enhancements in XP SP2.

"Because of the value in securing customers we thought it was key to use any means possible to get this out," says Goffe, who added that delivering critical updates via service packs will not be the strategy in the future. "The challenge was to find the right balance and do the right thing for consumers and for enterprise customers."

Goffe did not have a breakdown of how many of the roughly 200 million XP desktops in corporate settings.

Those caught in the crossfire can use Active Directory, log-on scripts or e-mail to distribute a new registry key to users. The key, which goes by the value name "DoNotAllowXPSP2," has a toggle that determines if the machines will accept the XP SP2 download through Automatic Updates. The registry key won't prevent Automatic Updates from downloading any other updates or patches.

Microsoft will configure its Windows Update Web site, the online patch repository used by Automatic Updates, to recognize the registry key for 120 days. After that, Windows Update will be configured to deliver the service pack to all Automatic Updates-enabled machines.

"When you think about it, it really is insane for Microsoft to put something the magnitude of XP SP2 out as an automatic update," says John Kretz, president of Enlightened Point Consulting Group, a systems integrator in Phoenix. "Companies should always be in control of something of this magnitude." ■

Stopping automatic installation

Microsoft is offering options for blocking automatic installation of Windows XP SP2. The block is effective until Dec. 14.

Options	What is it?	How it works
Active Directory	A template for Active Directory Group Policy that fosters disabling, then re-enabling delivery of XP SP2.	Admins target a set of desktops; Group Policy mechanism automatically configures target systems.
Executable file	A small program that accepts one of two command-line options (disable and enable).	Executable creates new registry key that controls ability to deliver XP SP2 to a system.
E-mail	Link sent through e-mail to desktops.	User clicks on link to install executable. User must have administrative rights.

EBay taps WholeSecurity to fend off phishers

■ BY CARA GARRETSON

WholeSecurity has struck a deal to help protect eBay's customers from phishing scams.

The online auction giant is licensing WholeSecurity's Web Caller-ID software, which detects spoofed sites. EBay will include Web Caller-ID in the Account Guard feature of the eBay Toolbar that stays resident in users' browsers, alerting them whenever they visit a site purporting to be eBay or its online payment subsidiary PayPal.

Employing technology to identify phishing threats is just one way the industry should attack the problem, says Howard Schmidt, eBay's chief information security officer and former White House cybersecurity adviser. "Like with any other threats, we're looking at what are the technical things we can throw at it or change to make [e-commerce] more secure," he says.

Web Caller-ID analyzes each Web page that an eBay Toolbar user visits implementing its "behavioral detection" method, searching for signs of spoofing, such as a long and convoluted URL or a recently registered DNS, says Scott Olson, senior vice president of marketing with WholeSecurity. When it detects a spoofed site, the software blocks the user from the site, produces a pop-up window explaining that the site is fraudulent and reports the site to eBay.

Unlike other anti-phishing offerings, such as Brightmail's anti-fraud service that scans incoming e-mail for links to known spoofed sites, Web Caller-ID works within the browser to identify fraudulent sites. "The browser is where the harm is done," Olson says. Users don't even have to enter information into a spoofed site to be harmed, he adds, because many sites automatically download malicious code to an unsuspecting visitor's PC and launch a virus or record the user's keystrokes.

WholeSecurity is making Web Caller-ID available exclusively through licensing agreements. ■

■ **Will phishing end e-mail as merchants know it? Don't be too confident that the answer is no, says 'Net Buzz columnist Paul McNamara. PAGE 54.**

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In Site: Lessons from leading users

Utility company powers up savings

■ BY JOHN COX

A Canadian power company is saving about $500,000 using laptops and PDAs, with some third-party mobile applications, for 400 field workers.

The goal of this mobile computing project at Hydro One Networks in Toronto, Ont., is to switch from error-prone paper trails into fast, accurate digital data paths.

About 300 mobile devices have been deployed, 60% of them Symbol Technologies PPT 2800 touchscreen PDAs, 40% IBM ThinkPad T series notebooks. They're being used by 400 of the 600 field workers who handle maintenance and repairs at nearly 1,500 power substations throughout Ontario. The pilot testing started in spring of 2003, and additional handhelds will be deployed by year-end, company officials say.

The embrace of mobile computing means that information concerning trouble tickets and equipment repairs is updated at the end of each shift, instead of one to three days later. The data is more accurate, says Ian McIntyre, manager of program and workforce stations for the utility. Field workers no longer have to print, fill out, check, mail and fax pages of paper reports.

The results are savings in paper processing and more accurate maintenance data.

"We have almost eliminated all the paper processing," McIntyre says. The utility was able to cut two full-time positions as a result. Other savings were realized by no longer having to correct data and eliminating some ad hoc surveys of equipment at substations.

"Our quality measurements showed about 70% of the [paper-based] reports were getting back to the system [on a timely basis] and about 70% of the data was accurate. Now both of those measures are over 99%," he says.

That accuracy and timeliness is critical for the heavily regulated utility.

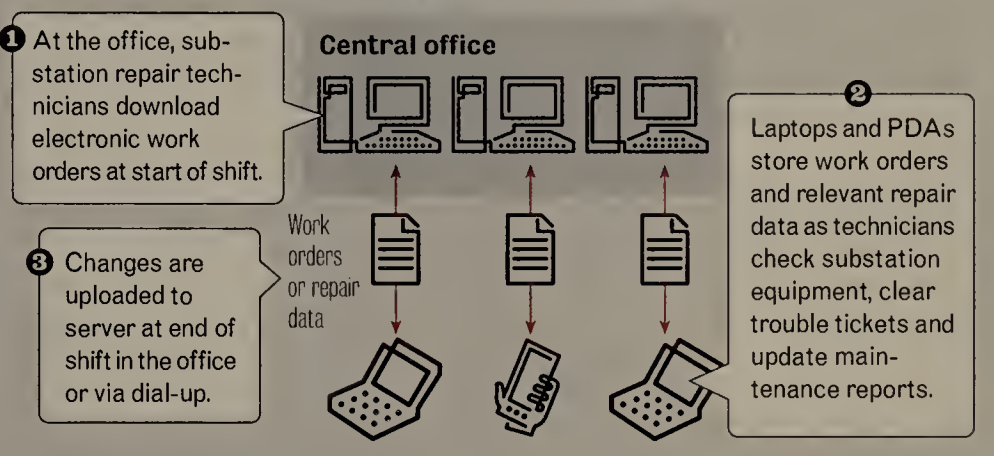
"Being regulated, we have to make submission to the Ontario Energy Board for rate [changes]," McIntyre says. "We have a set rate-of-return against our assets. To justify investments in maintenance and expansions, we have to show the status of our assets." The utility and the regulators now have a clearer idea of how to allocate maintenance resources and the costs of maintaining the transmission and distribution grid that covers 400,000 square miles.

And the utility does it without the added complications and costs of using cellular or wireless LAN connections. Hydro One's field workers plug their laptops into the corporate LAN when they report for work, download the day's work orders, visit substations and work offline.

See Hydro One, page 19

Electrifying paper

Ontario's Hydro One utility company uses mobile computers and applications to eliminate costs of processing paper and to improve data accuracy.



Short Takes

■ **Apple** last week issued updates to its Mac OS X server and client operating systems, including a security update that fixes a glitch in the graphics program within the client software. On Aug. 4, the U.S. Computer Emergency Readiness Team identified the **vulnerability in the libpng library,** which is used to display Portable Networks Graphic images. According to CERT, remote hackers could access systems via malformed PNG images, which also could cause systems to crash. The patch from Apple protects libpng libraries within the updated Mac OS X 10.3.5 operating system, Apple executives say.

Quintum helps put PBXs on VoIP nets

■ BY PHIL HOCHMUTH

Quintum recently released a new gateway that could help large organizations connect legacy phone equipment to a VoIP network.

Tenor AX is a device that can combine PBX lines and run them over an IP network, letting businesses consolidate voice and data WAN connections to cut costs, the company says. The box can be installed with any standard legacy PBX system and requires no upgrades to voice and data infrastructure.

The device comes in versions that support eight, 16 and 24 voice ports. It plugs into a PBX through public switched telephone network ports on one side and has a single Fast Ethernet port on the other for IP connectivity. The device includes an integrated H.323 gateway and Session Initiation Protocol user agent software, which let the device interoperate with multiple standards-based IP PBX and VoIP equipment. Technologies for QoS on the box include IP type-of-service support and Differentiated Services.

For deployments requiring more than 24 simultaneous VoIP calls, multiple Tenor AX devices can be stacked and connected to the same PBX for handling more calls.

Besides basic VoIP call connectivity, the box also lets many standard PBX features work across VoIP connections, such as caller ID, 911, 411 and toll-free-number support, call-detail record recording and legacy fax transmissions.

While large VoIP deals involving big companies such as Boeing and Toshiba have put IP PBXs in the spotlight recently, IDC says more companies are opting to enable their PBXs for IP rather than buy new computer-based VoIP phone switches. The research firm estimates products that let old PBXs work over IP networks will account for about 60% of 5.6 million VoIP lines sold this year, with the remainder being pure IP.

Analysts say this 60/40 trend in terms of IP-enabled vs. pure-IP line shipments, will continue over the next several years, as businesses with PBX infrastructures look to add VoIP incrementally without replacing an existing phone system.

Tenor AX competes with VoIP gateway products from vendors such as Alcatel, Avaya, Cisco, Nortel and Siemens. The eight-port Tenor AX costs $2,000, the 16-port box costs $3,760, and the 24-port box costs $4,600.

Adtran dishes up another penny-pinching router

BY TIM GREENE

Adtran is moving up the food chain to lure Cisco access-router customers with a new family of its bargain NetVanta routers.

The NetVanta 4000 line is being introduced with the NetVanta 4305, a three-slot router that can serve as a VPN gateway and supports up to eight T-1 lines, some or all of which it can blend into one logical pipe.

The NetVanta 4000 line lies between the NetVanta 3000, which supports single T-1 access, and the NetVanta 5000, which supports dual T-3 access. Like other NetVanta routers, it is designed to undercut pricing of similarly sized Cisco routers with a trade-off between Cisco's broader product family, more features and more extensive management vs. Adtran's lower price.

Adtran says the new router competes against Cisco 3725 routers, which cost $8,300. NetVanta 4305 costs $2,500 with no cards and a basic software package. Enhanced software that includes VPN support costs $995.

The new box has two WAN slots for cards that also fit in the lower-speed NetVanta 1000 and 3000 routers and one larger slot that supports cards designed for the high-speed NetVanta 5000.

Adtran also is introducing three new NetVanta cards. The first is an eight-port T-1 card ($1,500) that fits in the large WAN slot in the NetVanta 4305 and in the NetVanta 5000. The other two are a large-format High-Speed Serial Interface card ($1,300) to connect the routers to a separate T-3 DSU/CSU and a small-format, two-port T-1 card ($650).

The company is upgrading its Adtran Operating System, which supports VoIP, by making it possible for Session Initiation Protocol signaling messages that set up the VoIP calls to cross firewalls readily and to close firewall ports when calls are concluded.

The updated Adtran Operating System includes some basic VPN features that most single-purpose VPN gateways supply as standard features. These include support for network address translation traversal, which makes sure IP addresses are resolved when privately numbered LAN devices make IPSec VPN connections and their addresses get translated to public addresses. ■

Vendors target remote-access security

BY TIM GREENE

Juniper and WatchGuard are coming out with new gear to provide small businesses and corporate offices with remote-access technology that can be managed from central consoles.

Juniper is introducing a trimmed-down version of its Instant Virtual Extranet (IVE) Secure Sockets Layer (SSL) remote-access software on an appliance called Remote Access 500 that supports 10 to 50 simultaneous connections and ranges from $4,000 to $7,000. Before, Juniper's smallest appliance, the SA 1000, supported as few as 100 users for $15,000.

By comparison, an A-Gate 60 SSL remote-access appliance from AEP Systems, which sets low price as a goal, costs $7,000 for 50 users, the same price as the RA 500. Aventail's smallest SSL appliance, the EX-750, costs $10,000 with a 50-user license.

The RA 500 is streamlined for small companies that might lack the IT staff and expertise to configure all the features of a full-blown IVE appliance. So Juniper has cut out the ability to cluster RA 500s, limited access controls to one option, and stripped out support for Security Assertion Markup Language, which enables full single sign-on capabilities.

But it does include advanced features such as software to check that computers making remote connections to the device are protected by anti-virus software and a firewall, and that running applications are legitimate. At the end of a session, it cleans out temporary files used during the session.

"I don't think anybody gets down to that much functionality for 10 users," says David O'Berry, director of IT for the South Carolina Department of Probation, Parole and Pardon Services in Columbia, S.C., who beta-tested the RA 500.

The RA 500 is available in three models: the 510 for 10 users at $4,000; the 525 for 25 users at $5,500; and the 550 for 50 users at $7,000. They differ only in the number of user licenses they support. Upgrading from the 510 to the 525 costs $2,050, and upgrading from the 252 to the 550 costs $2,200.

Meanwhile, WatchGuard is introducing wired and wireless versions of a new IPSec VPN appliance that supports remote access to small offices. Called Firebox X Edge, each can be bought with license for five, 15 or 50 simultaneous users.

Mike Pearson, WAN and security administrator for the Salvation Army Central U.S. division in Chesterfield, Mich., says he regards the edge devices as the next generation of WatchGuard's small office/home office (SOHO) 6tc family.

A SOHO 6tc appliance that provides a 75M bit/sec firewall and 20M bit/sec VPN for 10 users costs about $300. A Firebox X Edge for 15 users with a 95M bit/sec firewall and 35M bit/sec VPN costs about $580.

Later this year, WatchGuard is set to ship a wireless version of Firebox X Edge that supports 802.11 b and g Wi-Fi standards. The wireless versions range from about $570 for a five-user license to about $1,150 for unlimited users. ■

TOLLY ON TECHNOLOGY

Kevin Tolly

Lookout for Outlook

Spam filters and constant pruning notwithstanding, my Outlook mailbox is just plain huge. With my Outlook offline storage file weighing in at more than 1G byte, I sit here today with something north of 10,000 items in my in-box with about half that amount again residing in Sent Items.

While Outlook 2003 certainly is better equipped than prior versions, its search capability is still relatively labor-intensive if not primitive. Finding a particular item involves clicking off which folders to search. If your time frame involves something older than "last month," you find yourself following an "advanced" tab to yet another "advanced" tab ("double advanced") into a great labyrinth of more options than you could ever deal with.

Thus, the Google-like simplicity of Lookout from Lookout Software (www.nwfusion.com, DocFinder: 3338) is a welcome relief. And simpler is better. Not only are your search results delivered, by default, ranked by relevance but using simple keywords, such as "from," you also can hone your search without resorting to the likes of the aforementioned "double advanced" menus.

All this is free from what appears to be a tiny company. But it's not. One might hazard a guess that Microsoft's Outlook search development team has more secretaries than Lookout has developers.

But there's more to the story than just a neat tool. Just last month, Lookout became part of Microsoft's move to unseat Google as the premier provider of search services (DocFinder: 3339).

Lookout is now part of Microsoft and its technology looks to become an important element of the behemoth-to-be MSN search. As much as Microsoft has been criticized over the years for its arrogance, recent acquisitions have proven that it is sufficiently humble not to overlook outside technologies simply because they were "not invented here."

One can be sure that Microsoft sees the dual benefits of most acquisitions — adding it to the Microsoft arsenal while taking the same technology out of play for competitors.

Look what Microsoft managed to do with the "virtual PC" space. Two years ago, it was dominated by two small companies, VMWare and Connectix. While using Microsoft as its base operating system, Connectix offered support for Linux guest operating systems. Microsoft bought the company in early 2003. Guess which guest operating system suddenly became unsupported?

This left Microsoft users interested in learning Linux with only VMWare (which EMC purchased in the interim). So, with one stroke, Microsoft not only helped promote its own virtualization strategy but made moving to Linux a little bit harder.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

Site: Lessons from leading users

Hydro One

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At the end of their shifts, they plug the computer into the office LAN, or sometimes dial in, to synchronize with several back-end enterprise applications. The most important of these applications is PassPort, a client/server asset management suite from Indus International.

The total cost of the project was just over $1 million, covering the handhelds, development work, training and three mobile applications from the Telispark Mobile Enterprise by Infowave. Using the applications, technicians download electronic work orders, link the orders with data on specific assets such as power transformers and file electronic inspection reports on the equipment through the PassPort server. The Infowave software stores the data on a built-in mobile database.

The Infowave software is a group of three applications specifically designed for an array of jobs that are part of the routine daily work of service technicians and others who travel to different locations for customer service or equipment repairs.

Infowave's mWorkManager lets Hydro One technicians organize, view, update and close out the downloaded work orders via a set of graphical displays, pull-down menus and lists.

The second application, mAsset, associates the work order with data — such as serial number, repair schedule and historical data — for example, about a specific transformer, breaker or other equipment.

The third application of the suite, mInspect, lets the technician report on equipment conditions, using forms, checklists and typed entries.

As is often the case in mobile projects, work processes that flow smoothly on a desktop PC had to be streamlined for the mobile devices. One was the process of collecting the initial batch of work orders.

"We have thousands of these," McIntyre says. "Originally, a worker pulled them one at a time onto their screen. But if they had 100 of these, it was laborious to do this one at a time. Our PassPort tech support [team] created a PassPort screen to assign work orders in batches to given users. When the worker cradles his laptop or PDA, PassPort pushes down the relevant orders." ■

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Special Focus

INFRASTRUCTURE: Operating systems.

Linux makes inroads with Novell users

BY DENI CONNOR

Early adopters of Novell's Nterprise Linux Services say the package lets them consolidate server operating systems and offers a smooth migration path to Linux from NetWare servers.

NNLS was the first product that launched Novell full-bore into Linux. Released in December 2003, the package contains Novell's Virtual Office collaboration tool; its iFolder file management system; iPrint, which lets users print from any location; its Internet messaging package NetMail; its Web-based iManager package; Novell Resource Management, a tool for automated software management; and Novell's eDirectory. NNLS works on Red Hat or SuSE Linux.

In March, Novell announced that its next operating system — Open Enterprise Server (OES) — would incorporate NetWare and Linux kernels, letting users deploy applications on whatever platform they want. In OES, NetWare services will run on both kernels — those services include file services, clustering, print, identity, administrative, Web, patch management, health monitoring and client integration. Novell says OES will be available by year-end.

To familiarize themselves with Novell services on Linux, many users have tested the waters with NNLS, which contains components of OES. The operating system will run initially on 32-bit extension technology from Intel and 64-bit versions of SuSE Linux Enterprise Server 9, which Novell acquired last year.

Anthony Hill, CTO for Golden Gate University in San Francisco, and Keith Rajecki, infrastructure manager at the university, have deployed NNLS and plan on upgrading to OES when it is released.

There is a fundamental reason we started looking at NNLS — we are pursuing an IT strategy based around consolidation," Hill says. "We chose Linux as the [operating system] to consolidate database applications and Web servers. When Novell announced its Linux strategy it became a very obvious way for us to go and consolidate our networking environments around Linux."

Hill, who has 14 NetWare 5.5 servers and 1,000 users, considered migrating his servers from NetWare to Windows, but he saw problems with that approach.

"Had we gone with Windows, we wouldn't have achieved any economies of scale through consolidation, and it meant bringing in some competing architectures such as messaging and directory services," says Hill, who uses Novell's GroupWise, eDirectory and ZENworks management package.

Staying with NetWare wasn't a good choice for Hill either.

"Had we stayed on NetWare, we could have stayed with the Novell tools, but we wouldn't have enjoyed any economies of scale because NetWare requires dedicated staff and skill sets, and there's a relatively small number of software vendors supporting [the operating systems]," Hill says.

Hill chose to pin Golden Gate's network on Novell's OES instead.

"For us, the ability to run Novell's messaging and management tools, and consolidate that all around Linux allows us to achieve the maximum economy of scale and consolidate the enterprise from one end to the other," he says.

"Novell's strategy of providing a NetWare and Linux kernel has allowed us a smoother migration strategy," Hill says. He and Rajecki are migrating their network to NetWare 6.5 first because NetWare access controls won't be available until NNLS 2.0 is released at the beginning of next year.

"We did that only because we didn't want to have to migrate file system structures — in Linux you lose a lot of the security features that are available in NetWare, such as access controls," Rajecki says.

When NNLS 2.0 is released, "the Novell file system will be ported onto the Linux platform. Then, we are looking at taking our 14 servers from NetWare to Linux," he says.

Like Hill, James Taylor cites the decline in skilled NetWare administrators as part of his desire to migrate to Linux. Taylor, network/infrastructure manager for SPX Valves and Controls in Houston, has 50 NetWare servers in 13 international locations.

"We will move all NetWare services to Linux," Taylor says. "There is no reason for us to stay on the NetWare kernel. I'm looking at NNLS to provide a single infrastructure and get rid of all those Microsoft and Novell installations, and go Linux across the board for file and print sharing and for Novell services."

Taylor, who has been testing NNLS 1.0 for three months, says he hopes to also consolidate his 13 locations around one operating system. However, he'll wait until Novell releases OES for full deployment.

"I probably will wait until OES comes out because I don't think Novell is going to provide a seamless integration from NNLS to OES," Taylor says. "If Novell comes out with another version of NNLS that supports access controls, we would deploy it in production environments."

Danny Wall, network engineer for Health First in Rockledge, Fla., says OES will wean his organization of its dependence on Windows. Wall has three dozen NetWare servers.

"In our environment we have 350 to 400 applications," Wall says. "It's insane. Too many of them are Microsoft-based."

"When you look at the three major platforms — NetWare, Windows and Linux — there's a level of security, usability and customization," Wall says. "NetWare is extremely secure and stable; however, it's not easily customized. Windows is customizable, but it's not secure and stable. Linux bridges that gap, and you have customization."

To reduce dependence on Windows, Wall has installed three NNLS servers.

One of Wall's servers runs Novell's Virtual Office and eDirectory; the second is an iPrint server, and he'll use the third one for Novell's package management features. NNLS 1.0 includes the Linux Application (Red Hat Package Manager) distribution via the Ximian Red Carpet system, which it acquired in August 2003.

But Wall can't completely migrate to Windows because some users' applications still require Windows.

"Our finance department uses PeopleSoft, for example, which relies on [Microsoft] Excel," Wall says. "When PeopleSoft starts supporting a standards-based browser, it's possible that will open it up to Linux."

As for whether users will deploy Linux on their users' desktops — these IT managers say no.

"Our desktops will stay Microsoft," Taylor says. "We have Lotus Notes, and IBM isn't coming out with a Linux client. We have J.D. Edwards. We won't be able to steer away from Microsoft."

"We don't have any plans for Linux on the desktop," says Hill, whose staff supports 1,000 Windows desktops. "The real reasons we have for not supporting Linux on the desktop is our faculty and students are Windows users. We also enjoy higher-education pricing from Microsoft, so Linux offers little to no price advantage for us. Third, if you have a broad base of Windows applications to support, putting Linux on the desktop creates a very big systems-integration challenge for us." ■

Novell's Linux migration

Novell first announced a major Linux initiative in April 2003.

Feature	What it does	Product	Availability
Access controls	Trustee rights, file and directory access rights	NNLS 2.0	2005
Clustering	High availability and failover software	OES	December
Desktop integration	Login script support, file access, authentication	OES	December
eDirectory	Authentication and management	NetWare 6.5	Now
Health monitoring services	CIM-based management of server health	OES	December
iFolder	File management	NNLS 1.0	Now
iManager	Web-based management	NNLS 1.0	Now
iPrint	Lets users print from any location	NNLS 1.0	Now
NetMail	Internet messaging and calendaring	NNLS 1.0	Now
Novell Resource Management	Patch management, automated software management	NNLS 1.0	Now
Virtual Office	Collaboration tool	NNLS 1.0	Now

Enterprise Applications

■ PORTALS ■ MESSAGING/GROUPWARE
■ E-COMMERCE ■ SECURITY
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■ NETWORK AND SYSTEMS MANAGEMENT
■ WEB SERVICES

Short Takes

■ Anti-spam service company **Postini** this week is updating its **e-mail intrusion-prevention system** with stronger IP analysis to detect spam before it enters corporate networks. In Version 5.0 of **Perimeter Manager,** Postini has enhanced the service so that once an IP address sends spam to a customer's e-mail account, Postini automatically blocks mail from that IP address bound for any of its users. In Version 5.0, the company also has included a whitelist facility for IP addresses it has determined never or rarely send spam or viruses, factoring in those good reputations when determining a rating for whether an e-mail is considered spam. For messages that score high on Postini's spam rating, Version 5.0 includes a "blatant spam blocking" feature that deletes such messages instead of sending them into quarantine. Postini also has renovated the user interface. The upgraded service is priced from $6 to $30 per user, per year, with a minimum cost of $2,500.

■ **Vintela,** which develops software to integrate Windows and competing platforms, has developed an extension to Microsoft's management software that lets users control Unix, Linux and Macintosh computers. The company last week shipped **Vintela Management Extensions 1.0,** a set of components for Microsoft's System Management Server 2003 that provide discovery, inventory, distribution, reporting and remote features for managing servers and desktops, regardless of platform. The software can help consolidate management chores to one platform and help users avoid retraining on other tools when integrating non-Windows platforms into a Windows network. VMX is priced starting at about $1,200, which includes server, console and four client components. Additional client-side components are $75 per desktop and $125 per sever. The prices include a Windows client-access license, and Microsoft Product Support Services is providing first-level support for users with Enterprise Agreements.

On the lookout for spyware

Formerly a concern for home users, adware gets attention of IT execs.

■ BY ELLEN MESSMER

Organizations are increasingly eyeing spyware as a threat that needs to be blocked from reaching end users' desktops.

A catchword for software programs that watch what end users are doing at their computers, spyware is said to encompass everything from marketing cookies, pop-ups and adware downloaded with peer-to-peer file-sharing programs to malicious Trojans and keyloggers designed to steal personal data. Even at its most benign, spyware is generating anger in corporations that see it jamming up user desktops, causing malfunctions and slowdowns.

"It's an insidious scourge of the Internet" says Lisa Hagen, IT manager at biotechnology manufacturing firm Labcyte in Sunnyvale, Calif. "These are pieces of software that get installed unbeknownst to you."

Over the past year, Hagen has seen instances where employees' desktop machines were "acting weird" from the effects of adware, which Hagen tries to combat by having employees use anti-spyware software, including StopZilla. Other IT managers recount similar stories.

Daniel VanMeter, system security specialist at Kansas University Medical Center in Kansas City, says he's seen increasing numbers of network users approach the IT department to complain that their machines won't boot up or are malfunctioning. It often turns out there are hundreds of different spyware/adware programs interfering with each other, causing the computer to choke on them, he notes.

Vendors respond

Spyware complaints were once heard mainly among home PC users. Thus, most spyware-eradication software is designed for individual users. But as corporations increasingly express alarm, anti-spyware software developers are leaping into the corporate market, selling multi-user licenses with centralized management for security professionals.

Anti-virus vendors, which have long gone after dangerous keyloggers and Trojans that get lumped into the spyware category, are broadening their reach to go after adware. Trend Micro recently added the anti-spyware freeware Spybot to its anti-virus software.

David Stang, co-founder and vice president of research at anti-spyware vendor PestPatrol, which recently entered the corporate market, says detecting and eradicating spyware relies on the kind of signature-based technique used to define a computer virus.

"There's an analogy with anti-virus, and the techniques for wrestling with it remain the same," Stang says. PestPatrol's database runs to 23,000 spyware signatures, and the company typically adds about 75 new signatures per week.

Move over viruses

McAfee's top 10 threats for the first half of the year included four spyware/adware programs.

1. Exploit-MhtRedir.gen
2. VBS/Psyme
3. Adware-Gator
4. Adware-180Solutions
5. Adware-Cydoor
6. Adware-Betterlnet
7. W32/Netsky.d
8. W32/Netsky.p
9. W32/Netsky.q
10. W32/MyDoom.a

The adware components in spyware often are designed so they are hard to detect and eradicate because one adware program "may add 30 registry entries and a half-dozen files," Stang says.

Anti-spyware software has a tougher job than anti-virus software cleaning up desktop computers, he adds.

Peer-to-peer file-transfer software such as Grokster and marketing adware such as Claria's Gator software are said to be among the most prevalent adware "downloaders." Downloaders typically report back to servers about what users are doing on the Web and present advertising information.

A problem facing software vendors targeting spyware is that as the number of "pests" grows, so will the size of the software to detect it. PestPatrol's anti-spyware software today is 2M bytes "and it's going to get bigger," Stang says.

The larger the program, the greater the possibility of slowing the desktop machine. And that concerns McAfee, whose VirusScan 8.0 product for the first time also targets about 200 spyware/adware programs considered among the worst.

"We prefer to call them 'potentially unwanted programs,'" says Vincent Gullotto, vice president at McAfee's Avert research lab, who adds that McAfee is considering how to add more PUPS detections into future versions of its anti-virus software without causing performance degradation. McAfee intends to unveil an approach that might involve new technologies by this fall, he says.

Gullotto notes the term PUPS is legally less contentious, because some firms, such as marketing firm Claria, have objected to the "spyware" label.

McAfee customers often ask the firm to detect and eradicate PUPs they have found in employees' computers. McAfee often ends up reviewing the end-user licensing agreement (EULA) that is downloaded with the PUPs.

A gray area

If the software is violating its own EULA, such as sending passwords out through a back door, McAfee will eradicate it. But there is a gray area where the user might have given consent to download marketing adware. In which case, McAfee has to spend more time considering the legal ramification of wiping it from the computer.

"It's a quagmire," Gullotto says.

McAfee's legal counsel's view is that employees don't have the legal right to consent to downloading software because they don't own machines.

Marketing adware has brought about legal debate related to issues such as consent, privacy and free speech that arose years ago with so-called cookies, says Mark Rasch, senior vice president and chief security counsel at managed security services firm Solutionary.

"But what's really bad about spyware is that most people can't reasonably know what's going on — and that the stuff gums up their computer," he says. "Corporations need to inform the user on the issue of consent and what spyware is and what it's doing. And they should make anti-spyware available to block it."

Kevin Kingdon, analyst with security consultancy Intellitrove, says anti-virus vendors are "playing catch-up" with spyware

See Spyware, page 22

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'NET INSIDER
Scott Bradner

FCC chooses middle road on 'Net wiretapping

The FCC seems to have decided to take a path between the open road and a guarded tunnel when it comes to the Internet, but the jury is still out.

In March I wrote about a "Joint Petition for Expedited Rulemaking" that the Department of Justice, Drug Enforcement Administration and FBI sent to the FCC (see www. nwfusion.com, DocFinder: 3327). The petition asked the FCC to come up with rules to clearly permit wiretapping the Internet and Internet-based services (and to have service providers pay for the required network upgrades). The FCC has just published a "Notice of Proposed Rule–making" (NPRM) in response to the petition that details its tentative decision and includes requests for comments on particular issues.

The FCC published the NPRM on its Web site (DocFinder: 3337) and included statements by some of the FCC commissioners. The FCC is about to start on a 45-day comment period, and things could change in response to comments received, but some of the high-level conclusions seem clear.

The FCC has "tentatively" decided the Communications Assistance for Law Enforcement Act (CALEA) applies to "facilities-based providers of any type of broadband Internet service" (wholesale and retail). This includes wireline-, cable- modem-, satellite- and powerline-based ISPs. The FCC will propose "mechanisms to ensure that telecommunications carriers comply with CALEA."

The FCC also has tentatively decided that CALEA also applies to "managed" VoIP or instant-messaging services. At the same time, the commission tentatively decided that it would not need to identify future services and entities that also would be subject to CALEA because the final FCC order will make it clear enough.

The FCC does not assume it has all the answers and asks for comments on issues such as the state of CALEA-type standards for the Internet and the feasibility of carriers relying on third parties to manage a carrier's CALEA functions.

The FCC's tentative conclusion is that CALEA does not apply to non-moderated (for example, point-to-point) VoIP and IM applications or to non-facilities-based ISPs. The FCC could change its mind after receiving comments or Congress could change the rules, but, at first pass and without much detail, the decisions seem as balanced as one might hope for. They avoid the innovation-killing application pre-screening process and an impossible-to-enforce CALEA extension to Internet applications other than VoIP and IM.

Some of the commissioners are worried the FCC might be going beyond the current law or that the conclusions are on "very shaky ground." But, as one of the commissioners pointed out, in the end it will be the courts (and Congress, then the courts) that make the final decision.

We are at an important stage in the evolution of the Internet. The 'Net cannot be considered just a toy, even if some telco folk still think it is one, when law enforcement starts to see it as yet another observation tool. (But that is kind of a sad milestone.)

Disclaimer: At its age, Harvard has had lots of milestones, sad and happy, but it's not "yet another law-enforcement tool" and the above opinion is mine.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.

Spyware
continued from page 21

blocking, adding the most effective anti-spyware software he's seen so far to combat the worst of it is the $25 desktop software SpyCop.

Other approaches to spyware eradication include filtering at least some of it out at the Internet gateway, according to some IT professionals.

Online stock brokerage firm OptionsExpress in Chicago blocks signature-based unwanted programs, including keystroke loggers and the Gator client, at the Internet gateway, says Ben Stein, vice president of IT infrastructure. The firm is using StillSecure's Border Guard appliance, he says.

Claria, which last October changed its name from Gator and makes the Gator application and other marketing software, says it couldn't have executives speak directly to questions because it is in the "quiet period" before an IPO. But in an e-mailed response, Claria says it operates the "world's largest behavioral ad network" and targets its advertisements to segments of its "large, permission-based audience of users based on a broad range of anonymously identified behaviors exhibited across the Internet."

The company estimates that it has an audience of 43 million users worldwide and has had about 425 advertisers use its services. Claria rejects the notion that Gator disrupts a desktop machine's operations. ■

ServiceProviders

■ THE INTERNET ■ EXTRANETS ■ INTEREXCHANGES AND LOCAL CARRIERS
■ WIRELESS ■ REGULATORY AFFAIRS ■ CARRIER INFRASTRUCTURE DEVELOPMENTS

Level 3 snares major IP VPN deal

Sears to run voice, data, video over MPLS-based network.

■ BY CAROLYN DUFFY MARSAN

Level 3 Communications will provide IP VPN services to Sears, Roebuck & Co. stores nationwide through a network outsourcing deal that telecom experts say is one of the largest of its kind.

Level 3 will provide its (3)Flex Network IP VPN services to Computer Sciences Corp. (CSC), which is the prime contractor on the Sears IT outsourcing arrangement.

CSC announced in June that it had won a 10-year, $1.6 billion IT outsourcing contract from Sears that includes support for desktops, servers, data networks and Web-related systems. CSC has taken over IT support for more than 2,300 Sears stores in the U.S. and Canada, and it has hired nearly 200 of Sears' IT employees. CSC ran a competitive procurement to select an IP VPN carrier, and Level 3 won the contract.

"Level 3's technology leadership and high-quality network services make them an integral component of the IT solution that CSC will provide Sears," Don Durbin, CSC vice president for America's Outsourcing, said in a statement. "Level 3's IP VPN service provides the [Multi-protocol Label Switching]-based network that will enable future network convergence for Sears, improving both network manageability and costs."

Analysts say they believe Level 3 competed against the leading IP VPN service providers in the U.S. — including AT&T, MCI and Sprint — to win the Sears contract.

"This is a huge deal for Level 3," says Michael Howard, principal analyst with Infonetics Research. "It's a huge commitment by a blue-ribbon stock company like Sears. This means that CSC and Sears absolutely believe that Level 3's network — which is a very solid network — is something they can bet their business on for years to come."

"This is very good news for Level 3," agreed J.P. Gownder, a senior analyst at The Yankee Group. "As a company that only sells indirectly, Level 3 hasn't been able to demonstrate to the marketplace that they can provide a really big enterprise with a major product category like IP VPN services. This deal shows that working through a channel partner, a systems integrator, they can actualize the strategy they put out there."

Sears will use Level 3's (3)Flex Network IP VPN services to replace multiple legacy networks with one network based on MPLS technology. Sears will be able to run voice, data and video traffic over Level 3's MPLS converged network.

Howard says he believes Level 3 was selected because "their network is rock solid, their IP VPN service is rock solid and their pricing has to be good in order to lay in a 10-year contract."

Level 3's announcement comes just two months after the company expanded its (3)Flex Network IP VPN services and said it planned to boost sales through systems integrators and value-added resellers.

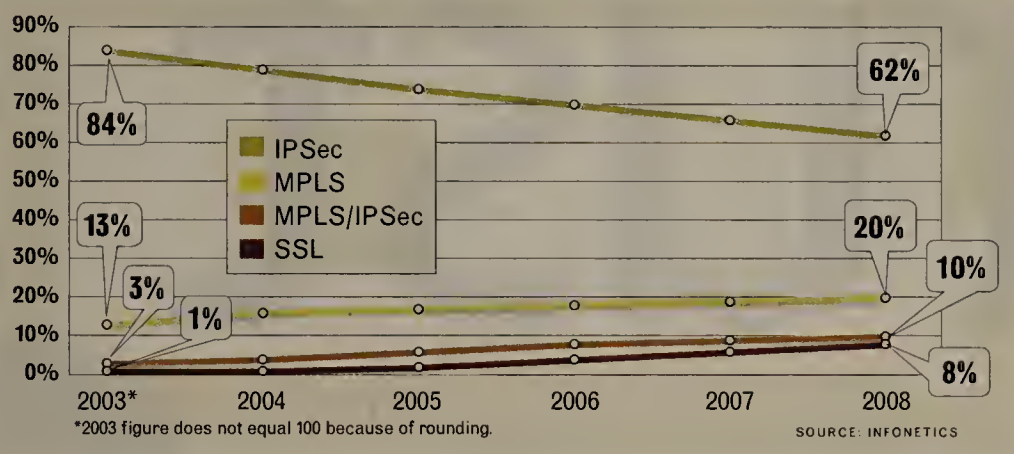
Level 3 officials credit their leading-edge MPLS network as the main reason behind contract wins such as the CSC/Sears deal.

"We have an all-MPLS network. We can provide end-to-end class of service from the customer-edge links across the backbone. That's unique," says product manager Collin Sellman. "We have the network and the integrated suite of products that other [carriers] are trying to get to. We don't have any legacy frame relay switches or legacy ATM switches. We're already at convergence."

Level 3 officials wouldn't comment on the dollar value of the CSC/Sears deal. ■

IPSec services on the wane

Revenue from SSL, MPLS and hybrid MPLS-IPSec VPN services will eat away at the current leading VPN service technology, IPSec.



*2003 figure does not equal 100 because of rounding.

SOURCE: INFONETICS

Short Takes

■ **The CDMA Development Group,** a wireless trade association, announced last week that **10.5 million new customers** signed up for Code Division Multiple Access wireless services in the second quarter. That brings the total number of subscribers to 212.5 million worldwide. The CDG counts not only legacy CDMA users but also next-generation CDMA2000 1xRTT and Evolution-Data Optimized users. The group noted that the majority of CDMA users are in the Americas, where 120 million subscribers use the service. Asia-Pacific has 88.8 million CDMA users, and Latin America has about 35 million. GSM dominates in Europe.

■ **MCI** announced last week that it is expanding services within its **Metropolitan Area Exchange** points. MCI's MAEs are peering points on the Internet where other service providers set up direct peering relationships to exchange traffic. MAE Extended Service lets service providers and large-business users set up peering agreements with other MAE customers even if they are not in the same facility. MCI has MAEs in Chicago, Dallas, Los Angeles, New York, San Francisco and Washington, D.C. The service costs $2,500 for a 50M bit/sec Gigabit Ethernet or OC-3 port or $3,750 for a 75M bit/sec OC-12 port. MCI also charges users for all outgoing traffic ranging from $25 to $50 per megabit depending on volume.

Sprint offers first SLAs for wireless

■ BY DENISE PAPPALARDO

Sprint has become the first wireless service provider to offer standard performance guarantees with its voice services.

Last week the carrier launched its network service-level agreements (SLA) that promise fewer than 2% of voice calls will be blocked or dropped, and 99.9% network availability per month. The SLAs apply only to business customer contracts.

"By guaranteeing products, [Sprint] is offering customers peace of mind," says Keith Waryas, research manager for wireless business network services at IDC. "At least Sprint is showing customers that it will put its skin in the game to provide best-effort services."

If Sprint does not meet any of these guarantees, users will be credited 10% of their regular monthly charges.

Waryas says the average business user spends about $60 per month. He says a company with 5,000 wireless users might spend about $300,000 per month on wireless services, meaning those credits would amount to serious money.

To see if Sprint lived up to its SLA, customers have to go to a password-protected Web site monthly to view wireless network performance metrics. If one or all metrics are missed, the customer then is required to request a credit. Although the guarantees are based on network-wide averages, Sprint is not offering proactive credits at this time.

Offering SLAs is "a smart move for Sprint," Waryas says. As Cingular Wireless and AT&T Wireless merge, Sprint will be the third-largest wireless provider.

"Sprint has been fairly aggressive in how it approaches customers, and it will continue to do so as the number of players drop," he says.

The guarantees are automatically available to all new Sprint customers and existing customers renewing contracts. Customers that have time remaining on their contracts must request to have the SLAs added to their contracts. ■

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EYE ON THE CARRIERS

Johna Till Johnson

Security today means playing 'defense-in-depth'

As recently as three years ago, if you asked IT executives to describe their information security strategies, you'd get an earful about "perimeter hardening" (carefully firewalling all points of the network connected to third parties). The idea was that if you locked down access to your network, you'd automatically protect applications, data and resources.

That approach worked fine for a while. But anyone who bases a security strategy on perimeter hardening these days is headed for trouble. Most large organizations today are taking an information-protection strategy known as "defense-in-depth" that's more comprehensive (but also more challenging) than previous approaches.

Defense-in-depth lets IT executives more effectively tie their network security strategies into the overall organizational "information stewardship" policy. As noted in my last column (www.nwfusion.com, DocFinder: 3328), over time I believe the discipline of information stewardship will encompass not only information management but security, storage and recovery — which makes migrating to a defense-in-depth architecture even more critical.

The fundamental challenge? You can't achieve security by keeping all third parties off your network. That goal is virtually impossible to attain: 100% of IT executives who participated in a recent Nemertes security benchmark said they granted third parties at least some access to sensitive resources.

Even if it were possible, doing so would preclude many critical business processes, which require organizations to be able to communicate effectively with partners, customers and suppliers. The world is increasingly externalized, and any security strategy that doesn't recognize this is a non-starter.

And as we all know, outsiders aren't always the bad guys. Insiders commit the majority of computer security breaches (80%, according to a CSI/FBI 2003 survey).

To create an effective defense-in-depth strategy, IT executives need an architecture that intelligently grants permission to applications, data and resources. Typically this means deploying identity management systems that recognize the identity of an individual or application attempting to gain access and map it against the policy for that type of access. That, in turn, requires a highly detailed understanding of what is being protected and from whom.

It's often the data (not applications or devices) that's most critical, thanks to privacy and accuracy regulations most organizations must now comply with. This has many implications. Network managers might need to revise encryption strategies, replacing link-layer encryption (which protects data on the wire but not in the system) with end-to-end encryption that protects data from unauthorized access even by insiders. Obtaining root-level access to routers and servers shouldn't provide access to data; even database administrators might not get to see all the records that, say, business managers might see.

Bottom line: Network managers should reassess their security architectures in the overall context of "information stewardship" — and enabling defense-in-depth is a great first step.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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Net.Worker

■ PRODUCTS, SERVICES AND STRATEGIES FOR TYING TELEWORKERS TO THE ENTERPRISE

Short Takes

■ **Citrix Online,** a new division of Citrix Systems formed when it acquired ExpertCity, recently announced a free 15-day trial of its new online meeting service. **GoToMeeting** offers screen sharing, integration with e-mail and instant-messaging applications, and free audio conferencing. Connections are 128-bit Advanced Encryption Standard encrypted. The service costs $49 per month or $468 per year for unlimited use.

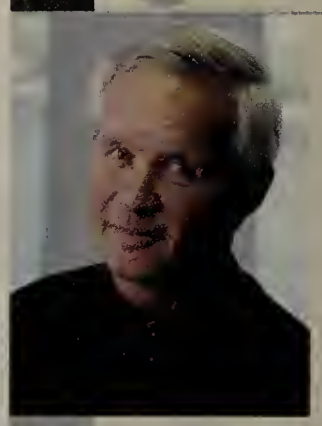
■ Half the firms in a new **Sage Research** study spend between $500 and $5,000 per year, per teleworker, on IT support. Of the 104 firms with more than 100 employees surveyed, only 4% said they spend nothing on teleworkers, and only 9% spend between $5,000 and $10,000 per teleworker. Twenty-six percent spend between $2,500 and $4,999, and 26% spend between $500 and $999.

■ A recent survey by the **Society for Human Resource Professionals** of 459 HR managers found employers have maintained or slightly increased most employee benefits. Thirty-six percent of respondents offer part-time telecommuting and 19% offer full-time telecommuting, both up by 2% from last year.

■ **WildBlue,** a start-up satellite broadband provider gearing service to rural communities and small cities underserved by DSL and cable, recently launched its **Telesat Anik F2 satellite.** The satellite uses Ku- and Ka-band transponders, and modems built on the DOCSIS standard, which WildBlue says will keep equipment costs low. Service is expected to launch early next year. Pricing has not been released.

■ **The International Telework Association and Council** will hold its annual conference Sept. 20-21 in Silver Spring, Md. The theme is "Mainstreaming Telework for Organizational Excellence." Topics include workforce trends and an update on laws affecting teleworkers.

Q A Check Point primps for small firms



Through acquisitions and partnerships, Check Point has expanded its reach to small offices, offering security appliances, subscription services and consumer software. President Jerry Ungerman recently talked to Net.Worker Managing Editor Toni Kistner about the needs of this growing market.

Check Point first made a big play in the SOHO market two years ago with the acquisition of SofaWare and the launch of a security appliance. Then things got quiet until last year when you launched the Safe@Office VPN/firewall line. How did this device evolve from the SofaWare device? Is it the same?

When we announced the SofaWare acquisition and product in January 2002, we wanted our partners — Nokia, Sun, IBM, Nortel — to bring it to market. Over the next 18 months, Nokia decided to concentrate on enterprise remote offices instead, and the others didn't gain enough traction. So last summer, we introduced two new Check Point-branded product lines with upgraded hardware and software. The VPN-1 Edge product is geared to large VPN deployments, thousands of offices, and for small businesses, the Safe@Office line, which has four models suited to one to 100 users.

Does a Check Point partner still build the hardware?

No, Safe@Office carries our brand, and we have them manufactured in Taiwan like everybody else. Small businesses get it preloaded and already running, easy to install.

Are you going after the SMB market too? It seems everybody is.

Yes, but we define it differently. For 11 years we've been in the enterprise market; we're in 97 of the Fortune 100, in 93% of the Fortune 500. We have 100,000 customers. Then we made a commitment to go after the small- and medium-businesses markets. But while some refer to one SMB market, we find there are significant differences in the users, their capabilities, their needs. So we've broken it down. Small is one to 100 and medium is 101 to 500.

We have the same problem with 'SMB.' It's much too broad.

Yes, the market's too diverse. And we know there's a big difference between a five- and 100-person company; we still need to break small businesses further into segments.

How exactly do you define them?

By the number of employees accessing the Internet and by number of offices. A small business would primarily have one office, maybe with some teleworkers. A medium office would have up to three locations and 500 employees. The five-person small business doesn't have an IT person; the 100-person office maybe does, but probably just one overall IT application person. The medium office has an IT person and maybe a security person.

How is your revenue divided among these markets now?

Of course enterprise still dominates with about 75% to 80%. The rest is medium and small businesses, a bit more of the medium-business market.

What major security threats do small businesses face today?

The day they sign up for broadband is the day they need to start worrying. And many don't realize it — even I have a number of friends who are running small businesses and I'm amazed by their lack of understanding. They just don't have the awareness that the Internet exposes their business to hacking and attacking and worms and viruses, that it can be damaged and shut down. That one attack would cost far more than a $300 or $1,000 solution from us, and much more than the monthly fee for a managed service.

How is Check Point educating small businesses?

Mostly through partnerships with resellers and broadband service providers like AT&T. Many broadband providers haven't been aggressive in explaining to small businesses that they need a security solution because they haven't had one to offer. So we recently partnered with McAfee to develop Secure-1, which takes our small-office appliance with VPN and firewall and adds McAfee's anti-virus software. We're taking it through the channel so small businesses can get it as a managed service. We manage it and put the policies in place and ensure everything's up to date and protected.

You also acquired Zone Labs just after Christmas. What can small businesses and consumers expect?

Zone Labs is the largest provider of consumer-based personal firewalls. The company just recently announced a new security suite that includes firewall, anti-virus, malware and spyware, available for download for small businesses and consumers.

Does the new suite use any Check Point technology?

No, although we'll introduce a product later this year that will integrate all of Check Point's and Zone Labs' technology. It'll be primarily for the enterprise, but some of it might get into the consumer product. And some will get into the small-business products for sure.

What are you working on for intrusion detection?

For the enterprise, we announced InterSpect in January, an internal security gateway that deals with worms and viruses inside the network down to the actual host.

Will that capability come down to the small business?

A lot of it is already there. We'll add more, the appropriate level of protection against worms and viruses — just like the big guys have to worry about. ■

Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

Network modeling detects anomalies

■ BY JOSE NAZARIO

As network attacks become increasingly sophisticated and frequent, it has become nearly impossible for security administrators to keep pace with every exploit, worm, virus and denial-of-service attack. To address this issue, new relational network-modeling systems detect security threats by recognizing when network traffic patterns vary from the norm.

Implemented through software, relational network modeling analyzes the role of systems on a network, examining all inter-host relationships and communications. Collection devices placed in the network monitor traffic directly, either by capturing raw packets or from flow exports built by routers and switches.

The data is aggregated centrally, and the relational network-modeling system processes it to find the common patterns of normal network traffic, including patterns for certain times during the workweek. By gathering data directly from a network, the model system accurately represents the network's behavior from various observation points, including the ability to sort and graph by service, client and server.

This approach assumes that hosts generally will have a set of behaviors they rarely drift from so that, for example, Web clients always will be Web clients, not Web servers. For instance, Host A is a client of Host E using the HTTP protocol, but Host A talks to Host D using the DNS protocol. And Host D does not suddenly start behaving as an HTTP server for Host A under normal circumstances.

After a relational network-modeling system gathers data, it builds a model that administrators can use to define and enforce a policy. When deviations from acceptable use occur in the network, security alerts warn administrators of the change, a process known as anomaly detection.

Administrators can use relational network-modeling data to quickly characterize a worm's behavior and quarantine traffic specific to the worm's propagation without disrupting normal business traffic. Administrators then can enforce the normal network model, using internal subnet firewalls, router and switch access control list statements, and virtual LAN ACL statements to create exceptions for previously accepted, or normal, traffic and deny all other traffic. Relational network-modeling systems helps generate these ACL statements and push them out to network control plane switches, routers and firewalls.

Taking this a step further, administrators can use the relational network model to protect their networks before a worm or attack infects the first host. This is accomplished by using the model generated during the policy-creation process to strictly enforce acceptable network behavior. Such preemptive acts can be taken the minute a new vulnerability is made public and before hackers write worms to capitalize on it.

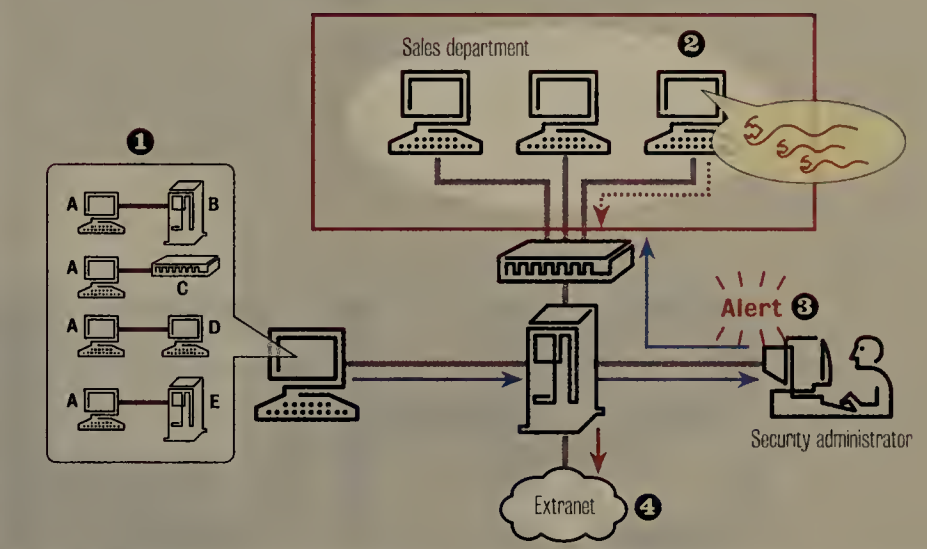
Detecting anomalies using relational modeling provides real-time worm detection without requiring signatures or advance knowledge of an attack. Administrators can react much faster and more precisely using relational network modeling than a team of network operators, who today must turn off individual machines, patch them when a signature update is available, and then turn them back on. The result is networks that are made more secure by proactively stopping attacks without disrupting normal business operations.

Nazario is a security researcher for Arbor Networks. He can be reached at jose @arbor.net.

■ HOW IT WORKS

Relational network modeling

Relational network modeling analyzes the roles of systems on a network. The modeling system detects anomalies by recognizing when behavior deviates from the norm.



1. Relational network-modeling software learns the host patterns across a network and creates a model of normal network behavior.
2. A worm infects a computer in the Sales department and begins propagating.
3. The relational network-modeling software alerts security administrators to abnormal traffic and quarantines it at the switch.
4. After the worm has been quarantined, normal traffic continues to flow across the network.

Got great ideas?

■ *Network World* is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).

Ask Dr. Internet

By Steve Blass

We're revising several Web sites and want to ensure they meet Web-accessibility guidelines and Section 508 standards. Where can we find information on the standards, and are there automated tools for evaluating and updating pages and sites for accessibility?

The World Wide Web Consortium's Web Accessibility Guidelines are at www.w3.org/WAI. Information on federal Section 508 standards is available at www.section508.gov. The Web Accessibility in Mind site (www.webaim.org) provides links to free and commercial evaluation and repair tools. The site lists several online page-evaluation services and has as an accessibility toolbar download for Internet Explorer from the Australian National Information and Library Service, plus several commercial products and services for ensuring Web site accessibility. Most of the free evaluation tools produce a report that describes the problems with your current page and provides recommendations for repairing it. Automated page revision and large-scale accessibility-compliance project-management features are found among the commercial products. For example, Dreamweaver MX includes Lift from Useablenet.com. To check a page for compliance in Dreamweaver, choose Reports from the Site menu, check the Accessibility box and click Run to generate a report.

Blass is a network architect at Change@Work in Houston. He can be reached at drinternet@changeatwork.com.

SHORTLIST

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GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

A few tools, a technology and some cool software

Tool 1: There are any number of replacements for the Windows Notepad text editor, and while some of the charged-for products are good, there's one we use that has great features, and even better, it's free.

Crimson Editor (www.crimsoneditor.com) is not only a terrific notepad replacement, it is also a powerful, flexible editor sensitive to the needs of programmers.

What we like about Crimson Editor are the interface, which provides a tab for each open document, the ability to define a set of files as a "project" and automatic coloring of keywords and other elements for many languages. (You also can define your own coloring rules.) There's also a built-in calculator (fabulously useful), and integration with C/C++ compilers, Java 2 software developers kit, the Perl interpreter and the LaTeX compiler.

You can execute programs from within the editor, save and replay keystroke macros, set Crimson Editor as the default source editor for Internet Explorer and add Crimson Editor to the context (right mouse button) menu of Windows Explorer. Did we mention it is free? Outstanding!

A technology: Self-Monitoring, Analysis and Reporting Technology (SMART) for hard disk drives. IBM created the technology behind SMART — Predictive Failure Analysis — based on the notion that hardware failures can be unpredictable or predictable. Unpredictable failures include things such as a chip failing — something that usually happens suddenly.

Performance measurements (such as tracking how long a drive takes to spin up or down, the bearing temperature and the current consumption of the drive motor) can identify predictable failures (such as the failure of drive motor bearings).

Also measured are decreasing head flying height (head crashes obviously come at the end of a downward trend); increasing number of remapped sectors (increasing value can indicate a drive heading south); increasing error correction use and error counts; increasing spin-up time (increasing values indicate potential motor failure); increasing temperature; and decreasing data throughput.

Drive manufacturers pre-program "acceptable" values for these diagnostic parameters into drives. When a measured value or trend falls outside of the acceptable range an alert code is set in the drive's SMART status register that can be read by diagnostic utilities. These utilities track the SMART status data and raise alerts to the PC system when problems are detected.

Tool 2: SpeedFan (www.nwfusion.com, DocFinder: 3329) is a freeware Windows 9x, ME, NT, 2000 and XP program that monitors fan speeds, temperatures and voltages for motherboards with hardware monitoring chips, and can access and report on SMART hard disk diagnostic information.

You can even tune the performance of fans; track CPU utilization; monitor power-supply output voltages; change processor and front-side bus clock speeds (not something to be done casually); provide a detailed report of SMART parameters; and graph fan speeds, temperatures and voltages. You have got to check this out!

Tool 3: If you want a SMART diagnostic tool that will work in a network environment, check out Active SMART from Ariolic Software (DocFinder: 3335).

Active SMART provides comprehensive SMART monitoring and reporting, and will display alert pop-ups, send network messages, and send alerts by e-mail (the product has a built-in SMTP client) when problems are detected. Active SMART is priced starting at about $25 per user.

Cool software: There are hundreds of Internet radio stations, many of them advertising and even DJ-free — check out a couple of our favorites, SomaFM and KCRW (DocFinders: 3330 and 3331).

But wouldn't you like to make tapes of Internet radio content? The answer is Station Ripper (DocFinder: 3332), a tool that can capture audio from one or more simultaneous Shoutcast streams.

Shoutcast (DocFinder: 3333) is a free distributed streaming audio system from Nullsoft based on its also free Winamp digital audio player (DocFinder: 3334), which hundreds of Internet broadcasters use.

When Shoutcast sends streaming audio data it includes whatever identifying metadata the station cares to include, such as artist, album and track name. Station Ripper opens a file and saves the audio datastream in MP3 format, adding the metadata as MP3 IDv3 header tags and naming the file using the same metadata.

How long until the Recording Industry Association of America gets its knickers in a twist over this?

Cries of "Shhhh! Don't talk about it!" to gearhead@gibbs.com.

CoolTools

Quick takes on high-tech toys

By Keith Shaw

The scoop: ZyAir 802.11g wireless USB adapter (ZyAir G-220), from Zyxel, about $100.

What it does: This small device, about the size of a stick of gum, gives 802.11g wireless LAN (WLAN) connectivity to any USB-enabled computer (Windows 98 or above) that does not have a built-in WLAN connection (aka older computers). The device also can act as a WLAN access point for notebooks that already have an Internet connection.

Why it's cool: The access-point ability of the adapter is what intrigued us, as we've tried several USB wireless adapters. Basically, if your computer already has a wired Internet connection but you want to share that connection with other devices, this adapter can act as a wireless bridge for the other devices. This could be useful in situations such as in a hotel room where there's one cable but several notebooks need to use the Internet.

It's a good idea in theory, but in practice we found it somewhat difficult to set up. The client utility does a valiant effort trying to make this easy, but several pesky network needs get in the way. To bridge the connection, we had to discover the IP address of the wired connection, then assign a static IP address to the WLAN connection and make sure that the IP address was on the same subnet and that the same gateway was indicated. After this, we had to assign a static IP address to any client that wanted to use the WLAN connection (we tried to get our Dynamic Host Configuration Protocol server to do it, but it never reacted).

Even then, on our first attempt, the bridge didn't work. We were asked to download a new driver for Windows 2000 support, but the link we were given didn't work.

So as a basic WLAN adapter, the device works fine. But the access-point ability of the adapter needs some software improvements.

Grade: ★★★ (out of five)

ZyAir's USB adapter can act as a wireless bridge between computers, but setup is cumbersome.

The Scoop: Fireball KeyPoint, from RedCannon, about $150 for 256M bytes; $300 for 512M bytes.

What it does: The Fireball KeyPoint is a USB flash device that lets mobile workers get their work done securely when on the road and accessing unsecure systems, such as Internet kiosks or machines not managed by their IT departments. Applications on the KeyPoint include a spyware scanner, a secure Web browser, private file storage vault (with 128-bit Advanced Encryption Standard encryption), and a secure e-mail client.

Upon connecting the KeyPoint device to a computer with an open USB port, the KeyPoint spyware scanner checks the system for any key loggers, Trojans, spyware, adware or other suspicious programs. If it finds something, it alerts a user. It doesn't delete these programs, but lets users decide if they want to continue.

The Fireball KeyPoint USB device helps ease IT fears of having unprotected data on the Web.

The secure browser opens a Web browser that stores cookies and Web browsing history on the KeyPoint device instead of the local computer; the e-mail client lets you access e-mail accounts without opening Outlook or anything on the device. The Vault application lets you bring your data with you on the road, encrypting the files as well.

Why it's cool: As more opportunities come for mobile workers to access corporate networks without having to carry a laptop, so will the chances for people to take advantage of that access. Internet kiosks and other computers that are convenient for workers are great, but Web browsing and e-mail checking have a way of leaving leftover data that the bad guys can exploit. The KeyPoint device solves these issues and can help ease IT fears about having unprotected data in the mobile computing wilderness.

Our only qualms were that the Web browser and e-mail client were basic. The browser had no pop-up blocker, and the e-mail client didn't have anti-spam features, so mobile workers who have those applications on their laptops might be turned off by having to use the KeyPoint versions.

But the spyware scanner and Vault application are great, and can be helpful to bring along with a laptop to keep road warriors safe.

Grade: ★★★★

Shaw can be reached at kshaw@nww.com.

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opinions!

ON TECHNOLOGY
John Dix

A matter of life and death

In a two-year span beginning in 1985, a type of computer-controlled radiation therapy machine called the Therac-25 maimed or killed six patients by wrongly delivering massive doses of radiation (see www.nwfusion.com, DocFinder: 3340).

While an extreme example, computer problems in healthcare can have dire consequences, which we have pointed out in our string of stories about problems applying software patches to medical systems (see DocFinders: 3341, 3342 and 3343).

These stories have touched off a firestorm online, both in our own forums (see DocFinder: 3344) and on Slashdot (see DocFinder: 3345).

The issue is a classic Catch-22 that has resulted in industry paralysis. Suppliers say they can't issue timely software patches because extensive evaluation is needed to ensure the patches don't cause more problems than they fix, and healthcare organizations have to patch to stay in compliance with HIPAA and other regulations.

The answer isn't as simple as isolating systems from open networks or abandoning Windows. Going back to the era where equipment didn't talk to anything else is out of the question, as one expert posted: "The more advanced features you want a clinical system to provide, the more that system needs to integrate with other systems. It's nice to be standing by the patient's bed and see monitoring data. It's even better to be able to export that data to another system so it's more useful or display it on a Web site so MDs can see it. All of this requires networking capability, and Microsoft (like it or not) is considered a leader in the field for server software."

Making matters worse, however, is all the finger-pointing. Vendors decry hospital security practices, and hospitals say vendors don't get it. For example: "As a senior [field service engineer] with a large healthcare equipment vendor, it never stops amazing me how the hospital is pushing their lack of IT security off on the vendors."

And this from a hospital worker: "Vendors don't know the communication requirements of their own system or state them so broadly as to be useless."

What is needed is an ongoing forum on the subject. But it is heartening to see the FDA championing the cause at conferences like the Department of Veterans Affairs event last week.

As one poster from a vendor said: "Is there an easy solution? Yes, allow IT to patch patient equipment. Is it a good solution? No, I think it's dangerous to the patients."

We need vendors to step up, the FDA to apply more pressure to get this resolved, and the finger-pointing to be replaced by collaborative effort.

— John Dix
Editor in chief
jdix@nww.com

Who will pay?

In Johna Till Johnson's column "As for spectrum allocation? ... Let's get crazy" (www.nwfusion.com, DocFinder: 3323), she suggests that there be a tax levied on wireless spectrum users "to fund very low-income households who otherwise couldn't afford access." Who would ultimately be paying for that "freebie"? The many subscribers that have to balance a budget at home just to be able to afford access? Johnson's contention that "all consumers would have access to a plethora of new services," should this tax be levied, would never be realized because many of us would have to switch back to dial-up or otherwise drop our broadband services.

I'm tired of so many of the "haves" wanting to use the "just barely getting bys" money to give the "have-nots" services that they might not appreciate unless they have to work and struggle to afford them. There are many charities, private organizations, public libraries and the like in this country to make available all manner of services to the general public without more being requested from the working class. Johnson can "get crazy" using her own money, but please, don't attempt to take any more of mine just because I work long and hard hours to earn enough to provide a service to my family.

Russell Stone
Fort Worth, Texas

The real issue

Regarding the story "Users, vendors treating healthcare patching ills" (DocFinder: 3324): I don't know why the debate is focused on patching — that process clearly is broken. It should be focused on getting these vendors to implement a host intrusion-prevention system and getting the specific security profile of the device through the Food and Drug Administration testing in their labs. This would ensure they have done the research and validated the operation of their device.

William Bailey
Enterprise architect
ProHealth Care
Waukesha, Wis.

Taming Frankensoft

I have two quibbles with Mark Gibbs' Backspin column "Frankensoft: The monster we made" (DocFinder: 3325). First, my peers and I have spent 20 years ensuring that computers met the availability and security requirements of business. Those same systems still are running (in updated form) and servicing much of business today. When the PC revolution happened, we were the IT industry; we were the best and the brightest, and we absolutely did understand and communicate where we would wind up. We were ignored by people who had no experience, but an unquenchable demand for less-expensive computing. Today, as Gibbs says so well, we have gotten what we paid for.

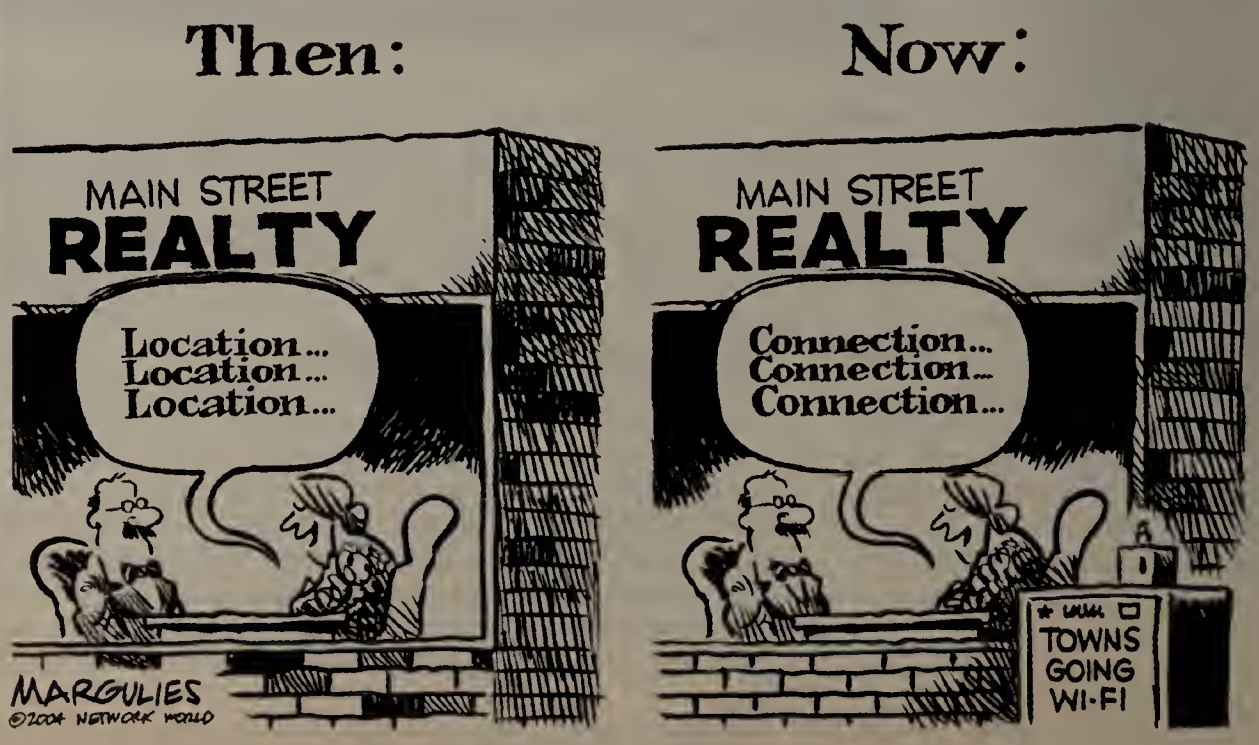
My second quibble involves Gibbs' claim that "if we don't do something about our reliance on Internet Explorer we risk e-commerce becoming a mess and corporate Explorer-based systems going into meltdown." Not really.

The problems get solved. It took IBM years to solve the equivalent problems in mainframes in the 1970s and '80s. I consult with many organizations with effective security models that suffer no breaches, viruses or worms. Current technology can handle the problems when properly deployed and managed, and Microsoft eventually will get to the point where everyone can enjoy the same level of security, just like the mainframe.

Chris Byrnes
Senior vice president, security
Meta Group
La Jolla, Calif.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 3321**



USER VIEW

Chuck Yoke

Training for convergence

As an engineering manager, one of my responsibilities is to help my employees choose the appropriate training they need to do their jobs and enhance their career growth. To do this, I regularly monitor the direction network technology is taking to identify needed training.

Interest in converged networks — especially VoIP — is increasing. VoIP has the potential to offer more opportunities for network engineers; however, it also will offer more challenges.

The key terms in VoIP are voice and IP. They go hand in hand, and to take advantage of the new opportunities VoIP will bring, network engineers will need to be proficient in both. Here is where the challenge lies and where the focus of training should be.

Most data network engineers are proficient in IP-based networks. Any network engineer who has even a modicum of experience is able to understand IP subnets, IP routing protocols and basic IP network design. These items have become so commonplace that some industry analysts believe IP network engineering is on the verge of being commoditized.

But few data network engineers have knowledge of voice engineering. I know very few data network engineers who understand Erlang B and C calculations and when to use them. I have yet to meet many network engineers who understand voice trunking, call center networks, Centrex, PBXs and advanced call handling. But knowledge of these concepts will be essential to anyone wanting to take advantage of VoIP opportunities. PBXs are the "network servers" of voice systems, Erlang B and C are the capacity planning models of the voice world, and Centrex is the "managed service" of voice.

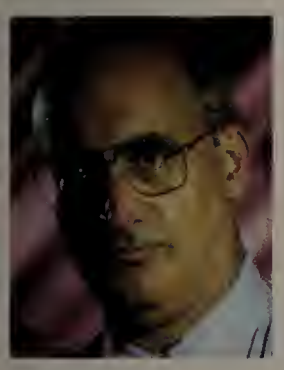
Without knowledge of these technologies, engineers will not be able to design networks that meet the standard voice requirements of 99.999% availability, low latency and enhanced QoS. While most people will put up with slow response times on their data networks and the inability to access file and mail servers because of outages, few people will accommodate lack of dial tone when they lift a handset or tolerate a call that has the "walkie-talkie" effect associated with latency issues.

Voice engineers also will need to acquire new skill sets. Many IT departments have excluded the voice group from their network management processes. Voice technicians often are free to make changes to the PBX as needed without having to follow change management processes. In addition, the ability to provide availability reports, system utilization statistics and usage metrics is not commonplace in the voice world. Voice engineers will need to become familiar with the more formalized processes and procedures associated with data networks.

Converged networks will create the need for specialized knowledge that will elevate the status of network engineering to levels not seen in the last few years. To capitalize on these opportunities, network engineers need to put in place a training plan to gain not only IP skills but also the knowledge of voice technologies. Now where did I put my copy of *Newton's Telecom Dictionary?*

Yoke is director of business solutions engineering for a corporate network in Denver. He can be reached at ckyoke@yahoo.com.

Network engineers need to put in place a training plan to gain not only IP skills but also the knowledge of voice technologies.



YANKEE INGENUITY

Howard Anderson

Living on the edge

For the past 20 years, the way you and I have made money in this business has been to pick a spot at the edge of the network and invest — I in the private market, you in the public market. Whole industries were doing the same thing. By moving intelligence to the head ends of their networks, the cable companies one-upped the broadcasters. Then the satellite companies trumped the cable guys by moving intelligence from the head end to the consumer.

But what happens when the edge of my network is the heart of your network? Clash of the Titans. This is why the ongoing catfight between the Creative Guys (read: Hollywood) and the Innovation Nerds (read: Intel and the Silicon Valley crowd) is great theater, and why they are spitting and cursing at each other and finally going to Washington to ask Mommy Congress to send the other guy to his room.

This is about Enemies with a capital E. The Innovation Nerds go postal when the Creative Guys suggest that the government rein in technological breakthroughs through legislation such as the Inducing Infringement of Copyrights Act of 2004, contending that doing so stifles innovation. The Creative Guys don't say they are scared witless of losing money; they say that this bill will help reduce kiddie porn and piracy.

So where are we going to make money over the next 10 years? The future belongs to those who can bridge the gap between content and technology. Look at Steve Jobs — the iPod is the first product to bridge hardware and entertainment, and iTunes is the first service where both sides have something to gain.

Let me tell you about my friend Todd Dagres. He used to work for The Yankee Group running our data communications group. Then he went to Battery Ventures, where he made an ungodly amount of money by investing in the edge of the network (River Delta, Qtera, Akamai Technologies). He left Battery and moved to Los Angeles, where he is looking at deals that cross over — content and technology.

Dagres is on my board at YankeeTek Ventures, so I am waiting to see what kinds of deals we will do together. Here is what I expect: The first few will out-and-out suck — Spider-man meets 802.16 — but then the next few will be out-and-out grand slams. The future belongs to the contrarians. What most of the industry does is try to organize according to technological bias, but new hypergrowth markets move across technologies, and that is where breakthroughs happen. Stupendous new markets open when you can cascade technologies. What would happen if I could cascade neural computing with GPS? Or voice recognition with data mining? You get the idea.

Hollywood is realizing that the old way of making movies through the star system is dead — unlike a real actor, Buzz Lightyear (produced through the genius of Silicon Graphics) is a star his creators own forever. How about a movie where you are Buzz's good buddy and the two of you fight the forces of Evil in an interactive game where you have achieved Level 9 against a team from China? The winner will get a role in the next movie/video game/reality show, plus $5 million. This is the strange area where reality and fiction are so intermingled that they are indistinguishable.

That is where you are going to find me — hunkered down among the crazies. Hurry or you might be too late for this new industry sector. You'll know you are when:

Time Warner/AOL gets out of it.
GE gets into it.
IDG launches a new magazine to explain it.
The Harvard Business School offers two cases on it.
Two new trade shows start up to sell it.
All of the above.
So get there early!

Anderson is senior managing director of YankeeTek Ventures and founder of The Yankee Group. He can be reached at handerson@yankeetek.com.

The future belongs to those who can bridge the gap between content and technology.

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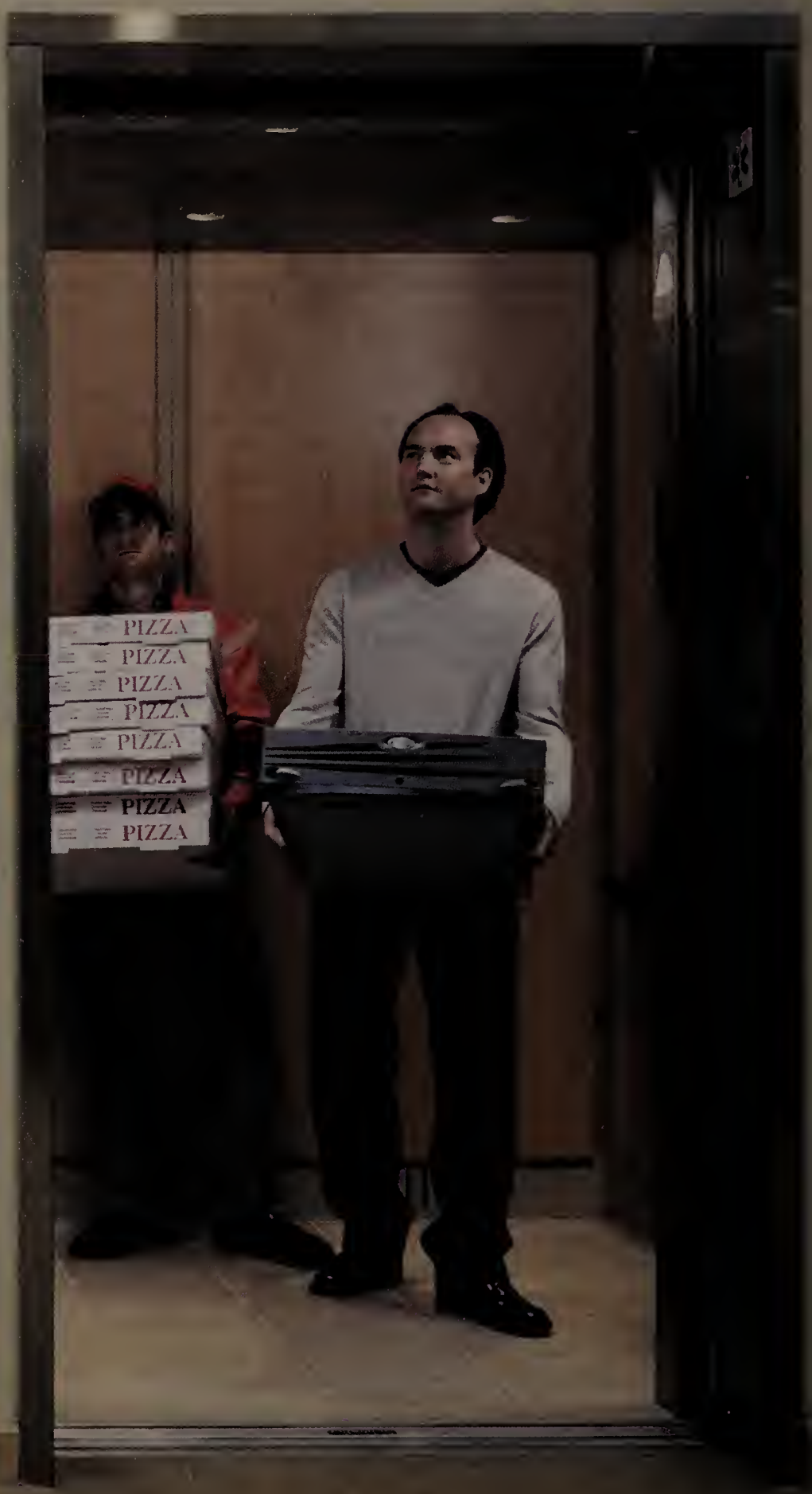

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Early adopters of blade server technology say the benefits aren't science fiction.

Blade runners

BY JENNIFER MEARS

Two years ago, United Title in Westlake Village, Calif., was looking for a load balancer and some Web servers to support a new e-commerce application it was getting ready to launch. The company ended up with a two-fer: a system from load-balancing specialist F5 Networks that just happened to be integrated into blade servers from HP.

"We didn't have to go out and buy a separate F5 appliance," says Peter Bowman, CIO of Nations Holding Group, which owns the title and escrow services firm. "The F5 solution within the BL10e [blade servers] allowed us to create an environment for the eBusiness infrastructure, and we didn't have to worry about sizing it because you could expand [the number of blade servers] quickly."

Bowman initially brought in 20 blade servers, and today he has 40 in the Equinix data center where he collocates his servers. "We're saving easily probably $20,000 a year, and that's just on rack cost and electricity," he says. "That's not counting savings in employee time."

United Title is an example of a company that got in on the blade server movement early, but analysts say more companies now are turning to blades.

The slimmed-down servers were introduced in 2001 with great expectations: Blades were expected to change the computing landscape. But that hasn't come to pass — yet. The slow economy hit the service provider market the blade vendors initially targeted, and enterprise customers tightened their purse strings and pulled back from new technology deployments.

In the past 12 months, however, with major server vendors such as HP, IBM and Sun squarely behind blade technology — and users recognizing the space savings, flexibility and scalability benefits — all that is beginning to change. Even Dell, whose support of the blade market has been cool since it introduced its first, and only, blade in 2002, plans to release a new blade system by year-end.

"The market is quickly expanding beyond early adopters in the high-performance and technical computing niche as vendors tap into their large installed bases of corporate customers," IDC analysts wrote in an April report on the blade market. "Vendor expectations for blades continue to be extremely positive, and 2004 is shaping up to be a pivotal year for blade adoption; it is expected that the market will undergo a shift from early adopters to more mainstream users."

WE'RE SAVING EASILY PROBABLY $20,000 A YEAR, AND THAT'S JUST ON RACK COST AND ELECTRICITY. THAT'S NOT COUNTING SAVINGS IN EMPLOYEE TIME."

Peter Bowman, CIO, Nations Holding Group

37

Clear Choice Test: We tested blade server platforms from IBM, HP and RLX for raw performance and management features. IBM's BladeCenter is our overall winner, but HP and RLX had strong showings.

Online:

Buyer's guide:

Get more detailed information on these and other blade server systems in our always updated online buyer's guides.
www.nwfusion.com, DocFinder: 2430

The research firm expects the blade market to explode in the next few years, growing from about $600 million in revenue last year to nearly $9 billion in 2008.

The growing momentum is already apparent. In 2002, just 39,000 blade servers were shipped, accounting for less than 1% of the entire server market. Last year, that number jumped to 185,000 shipments, or 3.5% of the market. IDC expects blade servers will make up about 40% of the server market in the U.S. by 2006.

Better integration coming

But what will drive this growth? Analysts say blades still largely are relegated to high-performance and technical computing deployments. But they say enhanced management tools, virtualization capabilities, and better network and storage integration combined with a growing interest from users in modular, scale-out computing — where multiple smaller boxes are tied together to act as a single resource — will help push these systems into corporate data centers.

United Title's Bowman says he uses blades as a platform for Web server farms and runs network monitoring utilities and management reports. He says he's looking to move everything — including databases and Exchange servers — to blades eventually.

> **OVER TIME, I EXPECT BLADES TO LARGELY REPLACE TWO-PROCESSOR TYPES OF HIGH-DENSITY SERVERS.**
> Gordon Haff, analyst, Illuminata

First, the company is working on creating a storage-area network environment, which will enable better virtualization of the blades because of the networked storage capabilities, he says. As a result, Bowman is looking for higher-processing systems and is considering HP's high-performance p-class blades.

"Over time, I expect blades to largely replace two-processor types of high-density servers," says Gordon Haff, an analyst at Illuminata. "Just as rack-mount systems displaced tower systems for most sizes of installations, I see blades replacing rack-mount systems."

But analysts acknowledge that challenges remain. Blades still carry a price premium, costing about 10% more than comparable 1U servers, according to Gartner, which notes that the more blades deployed, the better the ROI. However, when dozens of these scaled down servers are deployed in small spaces, cooling needs become more demanding. Another issue is standardization; there are few standards today when it comes to blade systems.

"Blades have many more steps to take to become a stable investment," says Jane Wright, a research director at Gartner. "So much will change in the next few years. Today, every vendor has a different format and a different backplane and different management software. This is a risky environment to invest your beefy business applications in."

Wright adds that blades are a good technology to start investigating and piloting now, "but don't go betting your business on blades at this point. Wait a couple more years."

Gartner expects blade server standardization efforts to pick up by 2006.

Standardization and integration

Vendors are working in that direction. IBM and Intel are pushing a de facto standard blade design. Other vendors aren't signing up for the effort, however. Darrel Ward, manager for product server planning at Dell, says standards will be important but that Dell isn't interested in the Intel/IBM blade project.

"This year we'll focus our blades on standards that exist like the Intelligent Platform Management Initiative and using industry standard technology chipsets and memory drives and things like that," he says.

"Long term, standardization around I/O and some aspects of management, such as how a chassis discovers the components that are in it, will be important. The best example of a standard that we'd like to emulate with blades is around PCI," he adds.

With standards, customers will have the ability to choose among vendors, thus driving down overall costs Ward says.

Other vendors are likely to follow that course. HP wouldn't be specific about its plans in this area, but executives say that integrating all the pieces — servers, networks and storage — is important.

"HP has a deep relationship with Cisco," says Rick Becker, group manager blades for the enterprise storage and servers group at HP. "We're investigating opportunities of how we can work closer together around blades. . . . We've absolutely got to partner with switch vendors and enable our customers to manage their networks and storage in addition to their servers."

David Nelson-Gal, vice president of N1 Systems at Sun, says users can expect enhancements to storage and network connectivity available in Sun's blade servers as Sun takes advantage of virtual switching technology it acquired from multifunction switch vendor Nauticus Networks and storage switch maker Pirus.

Bowman adds that integrated network and storage connectivity from third-party vendors would be a definite plus for his network.

Today, HP, like most systems vendors, offers integrated switching capabilities, but requires pass-through boards or other approaches to connect into the existing network infrastructure.

Bowman originally bought an integrated Ethernet switch from HP, but decided to scrap it in favor of a patch panel in order to hook into his Cisco network architecture.

"There is a lot to be said for keeping standards in your network," Bowman says. "The language was just such a barrier when you're used to dealing with Cisco's IOS and programming. I definitely think an integrated Cisco switch in the back infrastructure would be a strong thing." Bowman says he has the same concerns when it comes to storage connectivity.

Integrating network technology into blades is the route IBM is taking. Earlier this year, Big Blue announced that it had embedded Brocade's Fibre Channel switch and Cisco's Intelligent Gigabit Ethernet Switch Module into BladeCenter.

No matter the approach, the key focus behind the deeper integration is all about enabling users to create a virtual pool of resources that can be managed and provisioned simply, and can fit easily into the overall data center picture, analysts and vendors say. That will position blades to be a more critical platform in any data center. That means blade management tools will continue to be enhanced as well.

"Where it's going to get interesting is as these [blades] become increasingly complex, the management requirements become increasingly complex — things like virtualization, more in-house tools, and I'd also expect to see [independent software vendors] like Veritas getting further into this space," says Charles King, an analyst with the Sageza Group.

Management matters

Already, management software is a key factor in differentiating among the vendors.

It was RLX Technologies' management tools that helped drive 7ticks IT Consulting in Chicago to choose RLX over HP and IBM. Dan Stivers, CEO at the company, which works with the financial trading marketplace, says uptime and reliability is critical for his business and RLX's Control Tower software has let him move to blades sooner than he thought.

"Their real secret sauce is their management software," he says. "The time we save on the back end for system administration is tremendous."

Scott Farrand, vice president of systems engineering at RLX, says the next focus for RLX will be making its management tools more automated, "so it's less labor-intensive."

For Harry Williams, director of technology and systems at Marist College in Poughkeepsie, N.Y., management tools that enable virtualization are critical.

Williams has used IBM blade servers for about a year to run distance-learning applications. He likes the integrated Cisco switch and says enhanced management tools will make it even easier to virtualize the blade environment and move workloads among bladed systems. He says he's looking to expand his use of blades to support grid projects, streaming media and network management.

"We see all these things as giving us significantly more features that we're going to be able to take advantage of when it comes to blades," he says. ■

FACE-OFF

Dave Driggers (left), CEO of Verari Systems, says blades are a perfect fit for today's data center. Not so fast, counters Jay Adelson (right), founder and CTO of Equinix. There are still questions about reliability and cost savings.

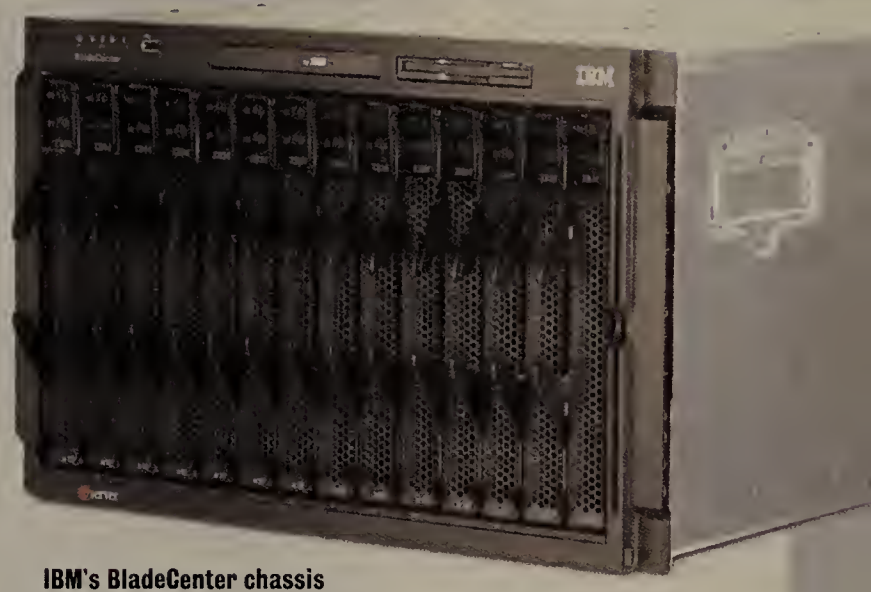
www.nwfusion.com,
DocFinder: 3326

CLEAR CHOICE TEST

Packed in tightly: Blades get sharpened

■ BY TOM HENDERSON, NETWORK WORLD LAB ALLIANCE

Jamming as much computing power into the smallest possible footprint is the goal behind blade servers. We recently tested three different server blade platforms — HP's ProLiant BL p-Class Blade Enclosure, IBM's BladeCenter and RLX Technologies' 600ex. On performance, we found the blades are pretty close — where they differ is in the companies' systems management applications and availability options — but IBM wins our Clear Choice Award for providing management and administration that was a cut above the competition.



IBM's BladeCenter chassis

All three vendors provided systems with architectures that perform about the same and are ready for heavy work.

Applications for blade servers are the same as any other server, except that disk and storage expansion typically is done through storage-area networks (SAN) and associated hardware/software. Most often, we've found blades being used for discrete applications, such as a blade for mail service, two or three blades for Web services, a blade for a relational database or CRM, or accounting applications. Increasingly, clustered blades tackle large database warehousing and mining applications, video-rendering engines and other computationally intensive applications, and these clusters are easily managed from a hardware and software perspective by the advanced management applications bundled or optioned for blade servers.

We installed the blade servers in one of the network operations centers (NOC) of nFrame, a large ISP/managed service provider in Indianapolis, which had the power and cooling we needed. Each vendor sent a specific configuration — a dual-CPU blade, a single frame, and connectivity for a SAN. Dell declined our invitation, as a new version of its system is coming out soon, and Sun declined, desiring a different test methodology. We actually asked for four blades, but found in testing that the results of testing four blades using our metrics is the same as multiplying the results for one blade by four.

Performance between the blades was close. IBM's offering was slightly better overall than HP's and RLX's, although RLX's OpenSSL under Linux took the computational prize despite a slightly slower CPU clock than the competition. Each vendor also took advantage of partners for "glue" products in networking and/or SAN connectivity. HP used Qlogic Fibre Channel pass-through boards. IBM included Cisco Gigabit Ethernet and Brocade FC switches. And RLX included Qlogic SAN components for its blades and chassis.

Performance between the vendors' blade submissions also was close. Because blade servers are used a variety of applications, we chose three simple tests to compare them: the number of Secure Sockets Layer (SSL) sessions that could be maintained, the maximum number of open TCP connections that could be held and a rudimentary blade server disk-copying test. IBM's connectivity was strongest, but its onboard Integrated Drive Electronics (IDE)-based hard drive was the slowest of the three. The dark horse RLX HPC 2800i blade server proved a strong performer. But the difference between the three vendors was very small, even insignificant.

The blade difference

Because blades pack a lot of computing power in a small space, chassis electrical current requirements are much larger than equivalent 1U-rack servers. All the chassis required 208V AC power and 30 amps for each circuit. Dual (and ideally independently fed and redundant) power sources are the rule for blades. Blade servers cool from front to back, not bottom to top, as is the norm in data center equipment racks. We had to switch doors from other racks in the nFrame NOC to accommodate the blade chassis. Depending on the installation, data center power-distribution requirements and cooling methods for blades need to be understood before deploying a blade chassis and related components. No amount of management control software will make redundancy pay if all the blades in a chassis are fried. Fan noise from blade servers is higher than normal — and is made higher because of the need for front and back rack door ventilation holes. The fan noise from the IBM chassis was deafening.

Each vendor was asked to specify the operating system it would prefer we test with. IBM and HP chose Windows 2003 Standard Edition, and RLX chose Linux Red Hat. From a performance perspective, our tests showed the choice didn't make a lot of difference (see graphic, below). All three blade servers noted that they support

Results

HS20 Blade Server, Blade Center Chassis

OVERALL RATING 4.7

Company: IBM, www.ibm.com/servers/eserver/ bladecenter **Cost:** $9,386 as tested. **Pros:** Outstanding management; tightly integrated at all levels. **Cons:** requires base Management Module blade server; noisy air flow.

NetworkWorld CLEAR CHOICE

BL20p G2 Blade Server, BL30p Blade Server, p-Class Blade Enclosure

OVERALL RATING 4.48

Company: HP, www.hp.com. **Cost:** $21,432 (4 BL30p blades); $30,628 (4BL2op blades); $10,610 for blade enclosure, power and other equipment. **Pros:** Highly flexible options; good overall management; easily installed and serviced. **Cons:** Slightly disjointed feel; needs sewing up.

HPC 2800i Blade Server, RLX System 600ex Chassis

OVERALL RATING 4

Company: RLX, www.rlx.com. **Cost:** $10,535 as tested **Pros:** Best Linux management seen; very good performance. **Con:** Components not as tightly integrated as others overall.

The breakdown	IBM	HP	RLX
Management 40%	5	4.25	3.75
Performance 25%	4.5	4.25	4.25
Flexibilty/features 20%	4.5	5	4
Serviceability 15%	4.5	4.75	4.25
TOTAL SCORE	4.7	4.48	4

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

other operating systems. IBM's supported list was the longest, but not by much.

Common to all the blade components we tested in our redundant power configuration was the ability for a blade server to be hot-pulled with automatic re-integration when re-inserted into the blade chassis. All the servers supported Preboot Execution Environment (PXE) boot, and all have optional remote deployment options for Win 2003 editions and Red Hat Linux (except RLX, where it's free with RLX's optional Control Tower XT management hardware/software). We tested PxE boot on all three blades, and all worked as expected. (For more information, see How we did it, www.nwfusion.com, DocFinder: 3336.)

BladeCenter details

IBM's BladeCenter chassis uses 208 AC, and the unit tested had power distributed by twin/redundant 208V AC feeds, which in turn branched to four needed 120V AC connections. Up to 14 blades can be inserted in each BladeCenter.

A Management Module blade sits in Bay No. 1 in the BladeCenter and can be accessed via KVM or HTTPS. The module permits a view of all the members of the BladeCenter, and lets them be queried as to state, and can power them on and off. The entire BladeCenter cannot be powered down at once — each blade must be powered down individually. The Management Module blade frees up a port on a blade server that otherwise might be dedicated to management.

We tested the HS20 blade, a two-Xeon CPU blade (IBM also sent an HS40 blade, a four-Xeon CPU blade, but we didn't test it). The HS20 takes up one slot inside the BladeCenter chassis. A daughtercard (called a "mezzanine adapter") is provided to connect blade servers to a SAN. Brocade provides redundant 16-port SAN switches if SAN options are chosen for the blades. Like HP, the IBM blades come with an onboard drive, and two can be placed on the drive in a RAID 1 configuration. Also like HP, IBM permits an external, hot-swappable drive to be used with a blade. This can be helpful because a blade must be removed from the chassis (and therefore powered off) for an internal hard drive swap to be made. The external drive can be hot-pulled or failed over to without removing a blade from its chassis. An IBM-branded Cisco blade provides either single or redundant Gigabit Ethernet switches to the IBM blade enclosure.

The IBM Director is the management application used for the BladeCenter chassis and components. Like HP's management applications, each item, including switches, can be discovered and managed by Director. Managed devices can be discovered through a query process and then populate the Director GUI. Devices with Director agent software can then have various facets examined, or set for error traps. We checked the trapping mechanism by watching CPU temperature and utilization. We then blocked a specific blade's airflow and watched the CPU temperature climb, until the blade shut down on our toggle. It took about 4 minutes for a CPU to cool down.

The Director software, where supported by Director agents, has incredibly granular details about the blade server. Director supplements the functionality of the management module blade, and Director has a superset of functionality over those in the management module. Director is the greatest strength of the IBM BladeCenter and was a pleasure to use.

Blading with HP

We first tested HP's blade servers in May 2003 (DocFinder: 3242). HP blade server implementations require a power distribution subsystem that takes up three rack-unit spaces. The HP blade chassis we tested takes up 6U. A smaller version (the e-class Blade Enclosure) wasn't tested. A dual redundant configuration requires two 208V AC 30 amp feeds; one power distribution unit can power several full blade chassis and/or other gear, depending on configuration. Up to three might be needed for a maximum 42U configuration; the power distribution units are connected via a back-of-rack bus. HP recommends 208V AC 3-phase power, and "Telco -48VDC power" can be used in lieu of 208V AC single phase.

HP makes several blades — we tested the BL20p G2 and BL30p. The BL20p G2 is full-height, compared with the half-height BL30p. Both blades contained dual 3GHz Intel Xeon CPUs with 2G-bytes of Dynamic RAM and an onboard hard drive. Both blades can be connected through optional dual-channel Fibre Channel boards to a SAN. Except for a slightly better disk I/O performance on the BL30p, we found the blades performed identically.

The enclosure we tested contained two Gigabit Ethernet switches, along with SAN switches. The GBE switches currently don't support 10G Ethernet, but there's a placeholder for when that is released. Blades within the chassis are networked via the Gigabit Ethernet switches through the chassis backplane. We found the switches don't produce a bottleneck. Using the switches contributes to fewer Gigabit Ethernet connecting cables.

The backplane represents perhaps one of the few single points of failure in the HP design, but all blade server makers share this problem. We found that it would be difficult to damage the backplane, unless it was deliberate.

HP's Integrated Lights Out Advanced (or "iLO") management tool set is a well-known, longtime HP/Compaq server management application that connects systems via an often-dedicated Ethernet port on an HP/Compaq server. This feature is extended to other server products in HP's line, so that an in- or out-of-band network monitoring and management system can be put together. There are no KVM connections to the servers — they are all managed by remote-control applications (included in iLO) via Windows Terminal Services.

Like IBM, HP offers a rack configuration application that produces a pictorial view of the rack and its components. This is a vital application for both vendors, as the number of potential options, devices, slots and ports that need to be tracked can be staggering.

RLX offers control

RLX uses three 208V AC 10-amp connections from the RLX 600ex chassis to an optional power-distribution unit. In turn, the connections feed the 6U high chassis' three power supplies. An optional RLX Control Tower XT management blade module can be installed — we tested the blade servers with this option. Control Tower XT is the best management interface that we've seen for Linux, but it's an almost $4,000 option, and also costs an extra $199 per managed node. However, rapid provisioning, a free feature contained in Control Tower XT, is an option in both the IBM and HP offerings.

A management LCD is used to initially configure the RLX 600ex chassis. Each RLX 2800i blade starts with an IP address coded to the slot where it resides. With the Control Tower XT software, an HTTP logon is used to start Control Tower XT. Red Hat Linux Advanced Server was shipped on the blades we received — this is done for free, although a license key must be subsequently introduced to the installation.

Control Tower XT is the rough equivalent of the IBM Management Module and Director software, as a hardware/software combination chassis administrator. It tracks faults based on SNMP, and the Intelligent Platform Management Interface specification. Like HP's Insight Manager/iLO and IBM's Director, Control Tower XT is used to administrate, manage and provision HPC 2800i, 2.8-GHz server blades. RLX blades also can PXE boot, and the process takes about the same time to load an operating system image.

Control Tower XT manages each blade and its chassis characteristics. An initial loading of blade server information is input to Control Tower XT — there's an auto-discovery feature that finds blades and its IP addresses automatically. Blade servers talk to the Control Tower XT management blade via a third Ethernet port on each blade server over SSL from a Control Tower Blade Agent, which must be manually activated (once) on each blade server. The management network must be kept private, as SNMP monitoring requires the use of the unsecure "public" community name.

Once devices are discovered or descriptions manually input, they must be registered before they can be managed. SAN port management isn't as useful as other controls offered for the other blade servers tested. SAN connections must be set manually, and both HP's and IBM's monitoring of SAN functionality were more complete and integrated in this regard.

Like Insight Manager/iLO and Director, Control Tower XT makes it possible to control blades and components remotely, once the devices are registered. Unlike Insight Manager/iLO, users and groups can be entered with an administrative class. We found that Lightweight Directory Access Protocol user and group information can be successfully used to import usernames/groups quickly, simply by pointing to the LDAP server with correct credentials.

The swordsmen clash

HP's offering provides a great deal of hardware flexibility that in our opinion exceeds that of IBM and RLX. IBM's Blade Center has the most useful and flexible management application, IBM Director, for blade system deployment in areas from large data centers through to remote branches. By contrast, RLX has strong management capabilities, but more confined hardware flexibility than IBM and HP. We've never seen a stronger management package for Linux-based servers, but, and the strength comes at a significant price.

All three are enterprise-ready, and all three require an adoption of "their way of doing things." All three are enterprise-class.

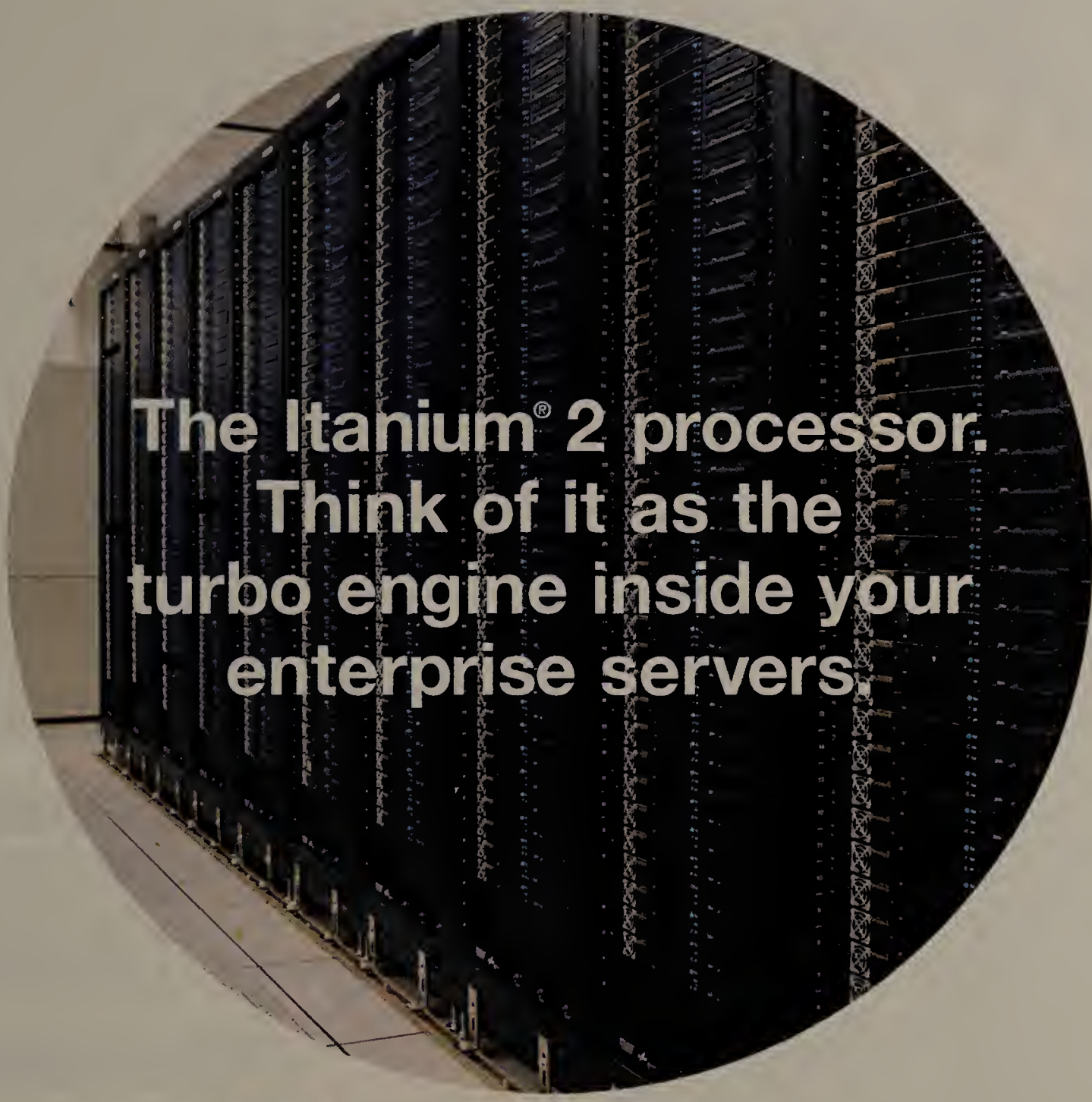
Henderson is managing director of ExtremeLabs in Indianapolis. Ken Miller, CTO of nFrame of Indianapolis, contributed to this interview. ExtremeLabs would like to thank nFrame for use of its facilities.

PERFORMANCE CHART

	SSL connections	Max connections/sec	Int Disk I/O
HP (BL20pG2)	622	58,228	23.9M byte/sec, RAID 1
HP (GL30p)	631	61,883	24.3M byte/sec
IBM (HS20)	639	63,404	19.9M byte/sec
RLX	671	56,315	27.1M byte/sec

OTHER specs

	CPUs	Blades/enclosure	Voltage
HP (BL20pG2)	2 3GHz Xeon	8	208V AC X 2
HP (GL30p)	2 3GHz Xeon	16	208V AC X 2
IBM (HS20)	2 3GHz Xeon	14	208V AC X 4
RLX	2 2.8GHz Xeon	10	240V AC X 4



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Technology testers

Special IT teams evaluate new technology, determine business benefits of deployment.

■ BY PHIL HOCHMUTH

Changing passwords, swapping out bad hardware and answering users' dumb questions are all part of being in IT. But often the reward for time in the tech trenches is a spot in a corporation's technology evaluation group.

Keeping up with the latest and greatest IT products can be daunting. Some IT shops in large organizations set up subgroups to evaluate new products and determine the business value they might bring. Other big firms assemble IT teams to test products in a specific category, such as security or open source. Smaller shops also may rely on a technology evaluator to separate the wheat from the chaff.

At package-delivery giant UPS, a separate Advanced Technology Group consists of about a dozen people who evaluate new hardware and software on a technical level and business-case perspective.

"We're looking out on an ongoing basis for new technology," says John Nallin, vice president of information services, global network systems and technology infrastructure at UPS in Atlanta. Key vendors visit several times per year to lay out their product road maps.

Most technology plans formed inside UPS come from needs of the business units, which dispatch liaisons. When a problem is identified, IT finds a technical solution.

The Advanced Technology Group is also proactive, with members looking out on their own for new technologies that might help the company. When someone in the group identifies a potentially useful new product, an evaluation is set up, which usually lasts four to eight weeks. During this time, the hardware or software is tested as it would be used in real-world deployment. If the product has technical merit, the group considers whether it would be cost-effective to deploy and the ROI.

At this stage, "we're looking into everything that is required — how many locations would need this technology, what that would cost," Nallin says. "Understanding the cost is very important in technology evaluation."

The team has found some great products that have reduced UPS' costs and boosted productivity, but there have been some misses, too.

Nallin points to a compression technology that was deployed in the company's data center a few years ago. "It ended up costing more to run the compression than it would have to just buy more [storage]," he says. "We lost some money on that."

Wireless has been one of the Advanced Technology Group's grand slams. "All the wireless stuff has been a huge success," Nallin says, referring to successful implementations of cellular and 802.11 wireless for tracking applications, and wireless devices that UPS delivery drivers use. "It's the differentiator, and it's something we've been pioneering for a while. [Wireless] is one of those technologies that we'll continue to tweak, and each time it will give us something more than last time."

At Hold Brothers On-Line Investment Services, new technology is essential to the small stock trading firm's survival. The New York company uses advanced trading software and a strong network infrastructure to remain competitive with behemoths such as Lehman Brothers and Merrill Lynch.

ALEX WILLIAMSON

Chris Lukas kept the firm on the IT forefront in his former position as CTO for emerging technologies at Hold Brothers. "If there is going to be a position such as mine at a company, the company has to either be very receptive to new technology or in a start-up building mode," Lukas says.

Lukas says that when he worked for Hold Brothers the firm actively sought new technology, a refreshing change from past employers.

"With this industry being the fastest-changing industry of all, you would think that there would be more people receptive to new technology," Lukas says.

Some of the largest companies have the luxury of targeting certain technologies that might have business value and assigning evaluators to track that specific area.

One U.S. auto manufacturer runs an Advanced Technologies Research Group, which has a department of people looking at Linux and open source applications to save money and replace proprietary systems.

"Being in the Advanced Technology Research Group gives me leeway to do things that are not normally allowed," says a systems engineer at the automaker who wishes to remain anonymous. This engineer focuses on researching open source alternatives to mail, file and print serving. "I have my own Linux desktop, and I run a dozen servers of 'non-authorized' types in the lab."

At another large company, a Linux-focused technology exploration group has evolved into a full-fledged IT support and development group. "Linux is one of those technologies that provides that proverbial blank white sheet of paper," says Tim Golden, director of Linux design and engineering at Bank of America in Charlotte, N.C. While initially established as an exploratory group, his team now distributes packaged Linux and open source hardware/software bundles for various business units and offices throughout the company. The group is also the lead IT team for evaluating and testing how applications running on the bank's proprietary Unix platforms would port over to Linux/Intel platforms.

"We've had applications running a 70% load that we migrated to Linux [servers] in a lab and found that we could put an additional nine applications on [the box] once we were in production," Golden says. ■

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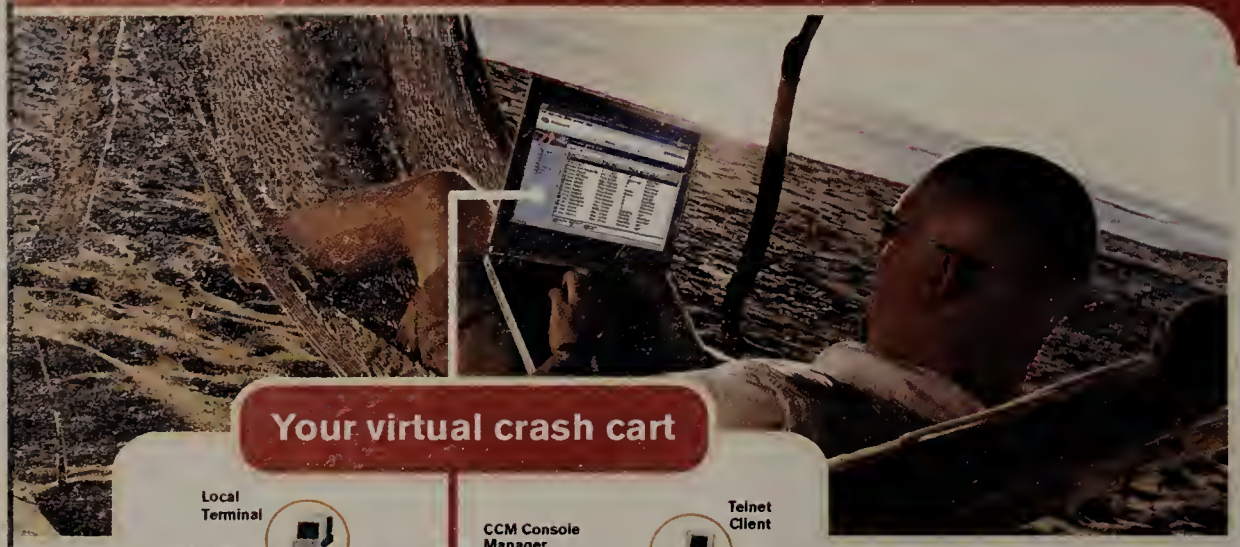

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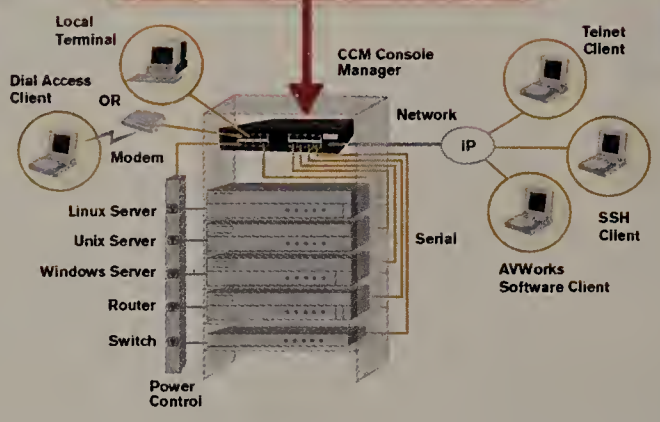

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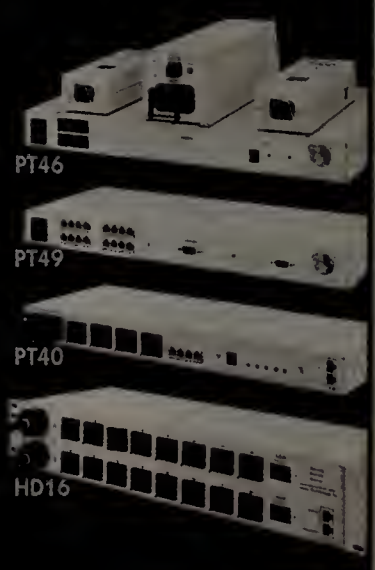

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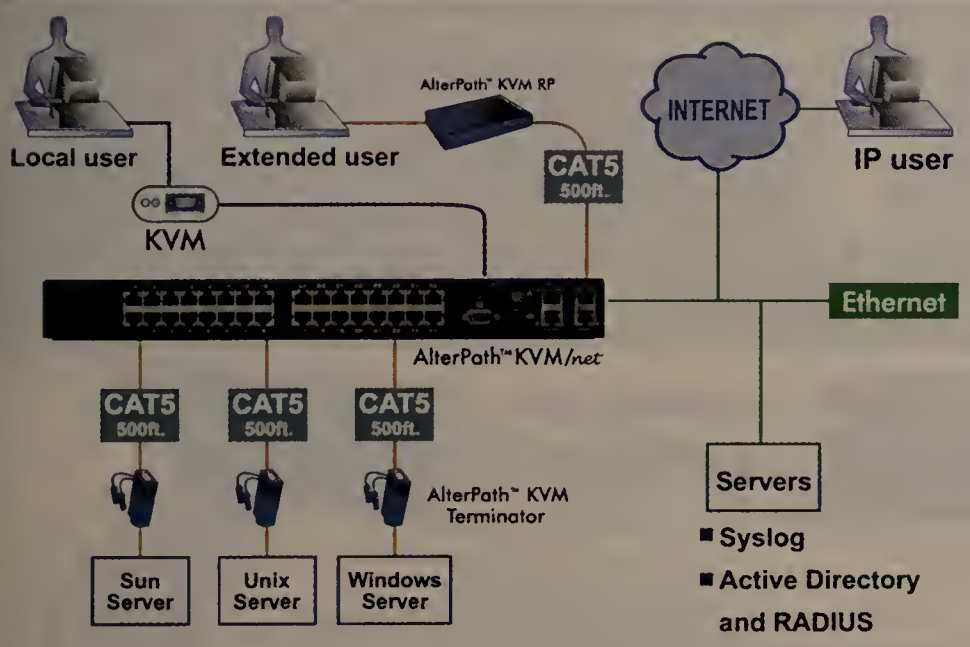

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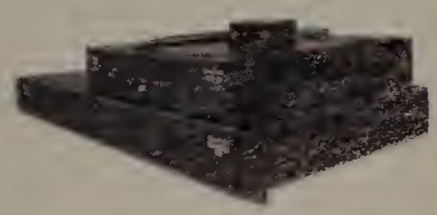

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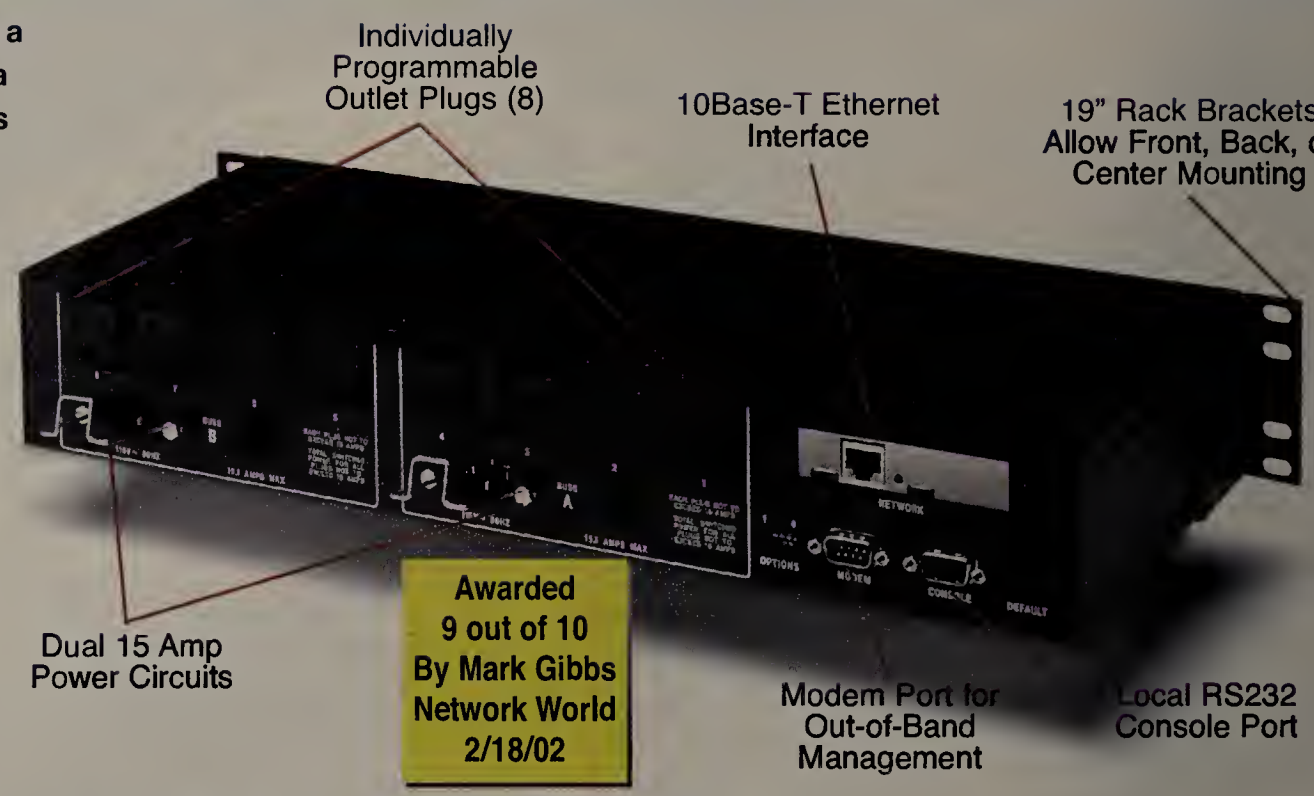

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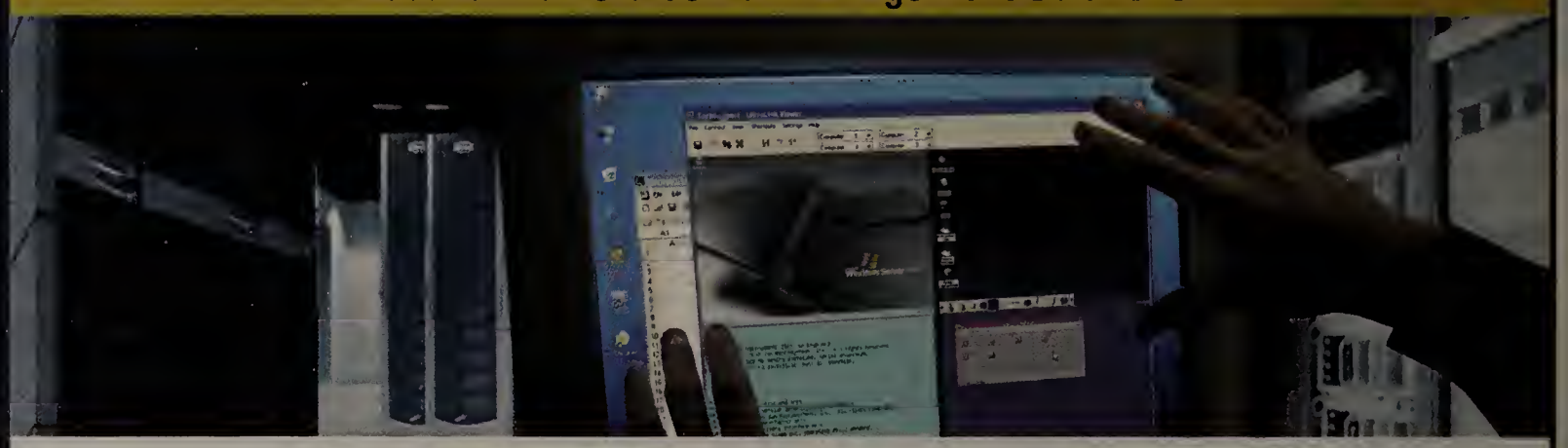

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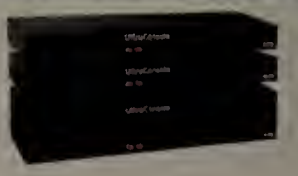

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Las Vegas Gaming, Inc. seeks Software Engineer in Reno, NV office. Product develop: research, planning, design, coding, debugging, testing. Product maintenance: Legacy support, Version control, Tech support, Re-engineering, Feature addition, training Work w/ C/C++, JAVA, SOL, VISUAL C++, MS SQL Server, Win32 API, Winsock. Must have Bachelor's in Comp Sci, Elect Eng, or related field. +4 yrs relevant exp. Resume to Kristy, Las Vegas Gaming, Inc. 4000 W. Ali Baba Ln, Ste D, Las Vegas, NV 89118.

Sr. Software Engineers needed. Seeking cand possessing BS or equiv and rel work exp. Exp. must include 1 year working with Win 32 API and Win CEFA. Duties include: Design, analyze requirements and develop specifications for software; Perform navigation product development for automotive industry. Mail resume, refs and salary reqs to: Alpine Electronics Research of America, Attn: G. Walsh, 19145 Gramercy Place, Torrance, CA 90501.

Programmer Analysts to analyze, design & maintain web appls using Java, J2EE, XML, C, C++, SAP, ABAP, Servlets, EJB, JSP, Weblogic, etc under Windows, Unix; design and customize user interfaces; develop reports; work with JDK to write Classes and Methods; document, code, troubleshoot and test projects. Require: B.S or foreign equiv in CS/Engg (any branch) with 2 yrs exp in IT. competitive salary. F/T. travel involved. Apply with resume to HR, Opalsoft, Inc., 3150 Almaden Expwy Ste 205, San Jose, CA 95118.

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Applicant should also have exp. in interface w/hardware & software, provide functional implementation, config. train, analyze, implement, code, test, backup, install, manage, customize, tuning, AS-IS study, Internet/Intranet applications, stored procedures, triggers. Create database tools, tables, files, roles, indexes, space management and re-organize. Apply w/ resumes to Attn: Recruiter, 2 Ethel Road, Suite 202-C, Edison, NJ 08817.

Senior Developer, AVP, Wachovia Securities, Chicago, IL. Provide direction for estab. IT reqmts., tech. architecture. Reqs. BA in CS or Eng.& 4 yrs exp. in pos. or as Staff Consultant, Systems Analyst or Analyst/Developer. The 4 yrs. must incl. work w/rel. databases, new appl. Dvlp., conversion of specs. into code, testing & prep. of code for prod. 3 yrs. must incl. work w/Oracle & DB2 SQL & stored procedures in Unix, PL/SOL, SOL Loader, SQL Plus, 6 mths of ASP.NET & C#, Shell Scripting & Autosys. 2 yrs. must incl. work in brokerage ind. & w/compliance regulatory systems. 1 yr. must incl. work w/Actuate & managing dvlp. of IT projects. M-F, 8-5. Send cvr. ltr. resume to Geri Ann Henderson, Wachovia Corp., 401S Tryon Street, NC0958, Charlotte, NC28288-0958. No phone calls.

Software Engineer (Merrimack): Research, design & dev computer software syst in conjunction with hardware product development. Consult with hardware eng & other eng staff to evaluate interface between hardware & software, & operational & performance requirements of overall system. Provide technical guidance on client projects. Will use Win NT/2000, C, C++, Java, J2EE, DB2, Websphere, Unix, Shell Scripts, Perl, HP-UX, Informix, AIX, Silk performance, Load Runner, Clearcase, IBM, Sun Solaris, XML, sED, AWK, Visual Source Safe, PL/SOL, SQL*Plus, Oracle, SCCS, RDBMS etc. Req'd Masters in CS, Eng, Phy, Math, or MIS, 2 yrs exp in job or Prog Analyst or Syst Analyst or Bach's with 5 yrs as Prog Analyst or syst analyst. 25% travel req. 40 hr/wk, mon-fri, 9am to 6 pm $102.690/yr. Send 2 copies of resumes to Job Order # 2004-110, P.O.Box 989, Concord, NH 03302-0989

IS ANALYST

Resp. for dsgng & dvlpng computer progs for company-wide propnetary data warehouse utilizing various Oracle-based applns. Specific job duties incl: (i) applying knowledge of Oracle programming techniques & comp. Sys. to plan, dvlp, test, implmnt & document comp. progs; (ii) evaluating user requests for new or modified progs; (iii) making site visits to gather info. & to analyze sys. reqmnts; (iv) consulting w/users to identify operating procedures, clarify prog. objectives & leverage functionality of Oracle-based dbases to address critical rqmnts; (v) applying knowledge of industry best-practices while configuring Oracle-based dbases & dsgng enhancements to optimize processes; (vi) applying knowledge of Java, SOL, Navigator, SAP ABAP & ACTA computer tools to support co's applns; (vii) utilizing Oracle, PL/SQL, OWB, OEM, Discoverer, Forms, Portal, JDeveloper & iAS computer tools to ensure high quality of co's IT systems; & (viii) providing backup support for Lotus & web applns. M.S. degree in Electrical Engnrg or Comp. Sci. reqd (or Bach. degree in Comp. Sci. or Elec. Engnrg together w/5 yrs of progressively resp. exp. in position offered or as a Software Engnr or Oracle Admin., will be accepted in lieu of MS degree) + 2 yrs of exp. in position offered or as a Proj. Mgr. or IS Consultant. Must have exp. dsgng & dvlpng computer progs for data warehousing utilizing Oracle 7/8i/9i, Oracle Applns Server OAS/iAS, APPS IIT, ABAP as well as PL/SOL & Windows NT computer tools. 40 hrs/wk, OT as reqd, 8 am - 5 pm, $90,000/yr. Fax resume to Michelle Coffey @ 919-549-3949.

Software Engineer. Design, Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Analyze and design databases within an application area, working individually or coordinating database development as part of a team. Will use HTML, Javascript, C, C++, VB, Vbscript, ASP, Powerbuilder, Sybase, Java, Oracle, PI/SQL, SOL Server, ESSbase Hyperion, EIS, EES, Microstrategy, Cognos, Business Objects, Informatica, Tivoli Websphere, iplanet, WM, VCS, Unix Admin, Win 95/NT.Bach. deg. In Comp Sci, Eng(any) MIS w/5 years exp. in job or as Prog. Analyst, Systems Administrator, Systems Analyst, 40 Hrs./wk.,9-6, $75,067/yr. Must have proof of legal authority to work in the United States. Send your resume to the Des Moines Workforce Development Center, 430 East Grand Avenue, Des Moines, Iowa 50309. Please refer to Job Order IA1101912. Employer paid advertisement.

Computers-Integration Architects needed. Seeking cands possessing BS or equiv. and/or relevant work exp. Duties include: Design, test & code software & Canonical schema for purchase order; Work w/ webMethods, XML, JDBC Adapter, Java. Exp. must include 1 year working w/ Java, XML and webMethods. Mail resume & refs to: Genesis Business Solutions, Attn: HR, 1821 Walden Office Square, #354, Schaumburg, IL 60173.

Progr/Analyst: Plan/program network and web appls. for large scale LAN/WAN networks in UNIX/NT envir. using TCP/IP, BGP/OSPF protocols, Cisco Internet Router (1000+), MPLS/VPN, VSAT, SNMP, OOS, Checkpoint, VPN, VoIP and Nokia Firewall; analyze complex circuit / networking / routing issues; direct network testing procedures.

DBA: Impl./upgrade/admin Oracle Appls for financial/service and 11i ERP/CRP info sys on Solaris, HP/UX, AIX, Compaq TRU64, Unix and Linux; Prepare Instance Strategy and clone instances using manual method, Adconfig, Adclone and Rapidclone utilities; Perform database upgrading with version control and system tuning using DBArtisan, Tickmark, SOL Navigator,170 systems, PVCS, CVS, DBTuner, RingMaster, TOAD, PL/SQL Formatter; and perform backup/disaster recovery.

Busi./Analyst: Busi. processes analysis/project mgmt in large scale Relational Database Systems. Convert busi. objectives into tech. solutions; develop resource plans and set development schedules; develop UAT plans and coordinate the entire UAT phase; establish standards for requirement gathering, use cases, UAT test cases, and documentation; analyze data in Oracle/SQL/Mainframe db; manage development life cycle including issues of production, manual/publication and future enhancement applying MS/VISIO, TestDirector, WinRunner, Rational ClearQuest, Rational Rose, QMF, File Aid, Business Objects, Expert Advisor, and Siebel's GEM; Interface w/offshore develop centers.

Progr/Analyst and DBA require BS/BA (or equiv. exp.) in Comp. Sc., Engr., MIS or in a related field plus 2 yrs. exp.; Busi/Analyst requires BS/BA in Busi. Adm.or in a related field plus 1 yr. exp. in offered/related position. Must be able to perform all duties on the day of employment. Full-time. Resume to HR NetEffects, Inc., 500 Chesterfield Ctr., Ste.350, St. Louis, MO 63017. No Call/EOE.

DIVISION LEAD WEB DEVELOPER (Lexington, KY) - Design, develop and implement image retrieval services using ASP and server-side Java; design and support SOL and MS Access database; using independent discretion, design and ensure development and delivery of web service projects; supervise and assign work to team members in developing and finalizing projects; coordinate development and production of services with overseas offices; review products and specifications for department; construct data decomposition diagrams, provide data flow diagrams and document processes; write codes for database access and modifications, and guide team members in implementing codes; coordinate testing, implementation, and installation of systems, upgrades, and network lines; regulate software usage and performance, and ensure software compliance with internal regulations.

Requires Bachelors in Computer Science and either 1 yr exp in job offered or 1 yr exp in designing, developing and implementing image retrieval services using ASP and server-side Java; design and support SOL & MS Access databases.

Salary $59,940/yr, Mon-Fri, 8AM-5PM, 40 hrs/wk.

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MPLS Protocols and Fast Path Data Plane Programming
Architecture, design and develop MPLS LDP, RSVP signaling protocols and QoS, and program MPLS labels in the hardware for the data plane. Experience in POS is required. Experience in Gigabit Ethernet and ATM is highly desirable. Experience in characterization of line card performance with IP and MPLS over POS and ATM data forwarding traffic is desirable. Requires a BS degree in EE/CS and 3+ years' experience in C/C++ software engineering or equivalent combination of education/experience.

Software Quality Test
Plan and execute tests for IP Routing/MPLS/ATM Protocol software. Develop automated test scripts in TCL/TK or C. Expertise with two or more of ATM, BGP, ISIS, MPLS and OSPF is required. Experience testing large network topologies and knowledge of TE or VPN extensions to routing protocols is desirable. Requires BS in EE/CS and 3+ years' experience in the development or SQA of routing protocols or equivalent combination of education/experience. Looking for 1st and 2nd shift candidates.

Applicants must be presently authorized to work in the U.S. on a full-time basis without work visa sponsorship. These jobs are located in our Billerica facility. Relocation assistance is not available. Email resume to: jobs@avici.com or fax your resume to: (978) 964-2650, ATTN: JBPST 0804. Responses by mail can be sent to: Avici Systems, Inc., Attn: Human Resources, 101 Billerica Avenue, Building 2, N. Billerica, MA 01862. No phone calls please. EOE

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IT PROFESSIONALS

Senior Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.). Conduct manufacturing industry client engagements providing consulting services in areas of business process transformation and system implementation, troubleshooting, and integrated software solutions to meet business needs. Conduct review and analysis of client business processes and procedures at organizational and operational levels, interviewing management and administrative personnel to determine optimal integration of business process reengineering with new information technologies and modification of operational procedures. Propose strategic solutions and business process improvements including benchmarking and design analysis. Assess projected timetables, project plans, financial and human capital resources and prepare recommendations. Participate in delivery of system(s), roll-out and implementation modifications. Provide post-implementation support and supervise both technical and functional staff. Participate in client development, including proposal generation. Provide knowledge repository, mentoring and technical liaison role. Provide customization of Oracle Manufacturing Modules using BOM, INV, MRP/SCP, ASCP, WIP/OSFM, COST and Configurator/Applications. Oracle Developer, Oracle Manufacturing and RDBMS.

WAGE: $102,000/year
Hours: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS:
Bachelor's degree or equivalent in Computer Science, Business Administration, MIS, IS or a related field + 3 years exp. in the job offered or 3 years exp. as a Consultant, Project Manager, Project Lead or a related occupation. Prior consulting experience must include Oracle Manufacturing and configuration and customization of Oracle Manufacturing Modules using BOM, INV, MRP/SCP ASCP, WIP/OSFM, COST and Configurator, as well as Oracle Applications, Oracle Developer, Oracle Manufacturing, Oracle RDBMS.

Please send your resume, referencing Job Order Number WEB443605 to the: PA Careerlink, FLC Unit, 235 W Chelten Ave Philadelphia , PA 19144. EOE

IT PROFESSIONALS

Senior Consultant, Lead Oracle Applications Database Administrator

(Glen Mills, Pennsylvania and other locations throughout the U.S.). Engage in capacity planning, installation, upgrades, setup, & administration of production & development of Oracle Applications 11i instances & Oracle 9i, 8i databases. Build a high performance & load balanced system architecture in consideration of Global Single Instance readiness. Assist the client in utilization of Oracle Applications by transferring knowledge. Maintain & support Oracle 11i (FIN, HRMS, CRM, SCM, & PAY). Build high performance technical architecture to support database backups, recovery, high availability, & disaster recovery. In support of high availability & disaster recovery, implement Oracle's RMAN system in conjunction with Tivoli Storage manger, 9i RAC, & HP Service Guard. Implement automated tools for monitoring, administration, & maintenance of Oracle Applications using UNIX Shell Scripts, BMC Patrol, Kintana, Rapidclone & Autoconfig. Utilize Enterprise Oracle Application Architecture.

The wage offered is $80,000 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The position requires a Bachelor's degree or equivalent in Mathematics, Computer Science, Information Systems, Engineering (any type), or Business Administration + 5 years of experience in the job offered or 5 years of experience as a Senior Consultant, DBA (Oracle Applications), or Information Technology Analyst. Employer regards a foreign degree as equivalent to a US Bachelor's degree as determined by an accredited education evaluation service. Related experience must include Oracle Applications (FIN, HRMS, CRM, SCM, & PAY) Administration and Oracle Database Administration, Enterprise Oracle Application Architecture, High Availability and Disaster Recovery, and at least one year of Global Single Instance (GSI).

Please send your resume, referencing Job Order Number WEB443808 to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

Programmer/Analyst needed for Software Development, Services & BPO firm located in S. Burlington, VT. Job duties include: Analyze, design and develop web-based applications using Rational Rose, Java, and C++. Develop core applications using Java and Sun One application Framework. Use SunOne Directory Server (LDAP) for data storage. Applicant must have B.S. degree in computer science, engineering, math, or business. Applicant must also have 2 yrs. exp. in the job duties listed above or in any computer related occupation which must include skills listed above. 40hrs/wk, 8:00am-5:00pm, Mon-Fri, $70,000/yr. Send resumes to: Job No. 27265, P.O. Box 488, Montpelier, VT 05601-0488.

Programmer/Analyst (position in Atlanta, GA): Apply knowledge of network/sys. architecture, integration, design, & deployment to formulate, define, design, & maintain network architectures using Win. NT, UNIX, OO, Client-server, n-tier environments & RDBMS (Oracle, Sybase, SQL, Mums, Java & web architecture). Req: BS or equiv. in Comp. Sci. or related w' 2 yrs. of exp. in job offered or as a Sys. Analyst or Software Engg. MS degree in Comp. Sci or its equiv. plus 1 yr exp. will be accepted in lieu of Bach deg. plus 2 yrs. exp.; job may require work at unanticipated worksites in the Atl., GA metro area. Send resume to: Ihsanullah Khokar, Gen. Mgr., Widezone International Co., 6340 N. Leavitt St., Chicago, IL 60659.

COMPUTERS - SENIOR SYSTEMS ADMINISTRATOR - Financial Management firm seeks Senior Systems Administrator to manage, maintain and upgrade Solaris/Unix-based network's central backup system, including STK L6000 library with STK 9940B tape drives. Duties include installation/maintenance of the batch system PBS and of Solaris/Linux systems; central LDAP service; internal company webservice; central CUPS-based print service; user support and security. Master's degree in Computer Science or Computer Studies and 2 years exp. in job duties required. Will accept candidates with 2 years experience as Systems Administrator of high speed networks in UNIX environment. Mail resume to RTC, 600 Route 25A, East Setauket, NY 11733, Attn: JR.

Sr. S/W Eng. for Device Driver Dev, SAN, Storage Area n/wk, .NET, OOA/D, & Kernel Level Program. develop app level s/w solns on Windows; d/zn & impl kernel modules /device drivers for Windows; dev func specs & d/zn docs; s/w modules in C, C++ & C#; d/base queries in PL/SQL; n/wk protocols on Windows; d/zn & dev multi threaded s/w solns on multi-proc platform; three-tier solns w/ GUI & Middle Tier in .NET; client-server aplns; Windows Services in C++/C# in .NET; enhance perf thru better algos; improve perf of low-level kernel subsystems; solns. to cust. issues; maint. & bug fixing. MS in Comp Sci + 2 yrs. exp. In job duties. Specify Job Code ST & apply: Unilinx 4625 Alexander Dr., # 110, Alpharetta, GA 30022 w/ proof of perm. w/k authzn.

PROGRAMMER ANALYST

Using knowledge of steel production & mfg processes, implement enterprise-wide financial & mfg software sys. & determine rqmnts & config. AXIOM software to dvlp common work processes for multiple plant locations. Must have 4 yrs of exp. as a Prog. Analyst or Sys. Analyst for AXIOM Implementations. Exp. must incl. AXIOM implementations at multiple industrial plant locations. High mobility preferred. 40 hrs/wk, OT as reqd. 8 am - 5 pm, $80,000/yr. Submit resume to: Armstrong County CareerLink, Attn: CL Program Supervisor, 1270 North Water Street, P.O. Box 759, Kittanning, PA 16201-0759 Please refer to Job Order Number WEB 443884

Programmer/Analyst needed for Software Development, Services & BPO firm located in S. Burlington, VT. Job duties include: Analyze, develop, code, implement and test computer software applications/systems for business clients located throughout the U.S. using C++, Linux internals, and VHDL. Also involved in GUI development and developing device drivers. Applicant must have B.S. degree in computer science, engineering, math, or business. Applicant must also have 1 yr. exp. in the job duties listed above or in any computer related occupation which must include1 yr. exp. in the skills listed above. 40hrs/wk, 8:00am-5:00pm, Mon-Fri, $60,000/yr. Send resumes to: Job No. 27260, P.O. Box 488, Montpelier, VT 05601-0488.

Software Engineer (2 positions) various locations - Research, designs and develops computer software systems in conjunction with hardware product development applying principles and techniques of computer science, engineering and mathematical analysis. Requires Master or equivalent* in Computer Science, Engineering or Mathematics. *Equivalent is a Bachelor degree plus 5 yrs exp. Requires 3-5** yrs exp in job offered or 3-5* yrs exp as Programmer Analyst, Systems Analyst or Systems Engineer. **3 yrs exp if Master or 5 yrs exp if Bachelor degree. Must have 1-yr exp using Oracle and PL/SQL. 5 day, 40 hr/wk, $75,000/yr. Please mail resumes to Workforce Development Programs, PO Box 46547, Denver, CO 80202 and refer to order number CO5086151.

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Database Administrator wanted by consulting co. in IL to dvlp data model describing data elements & their usage. Test, correct errors & modify changes to prgms or data base. Review, estimate time & cost of projects. Direct prgmrs & analysts, review workflow charts & train d/base users. Must have Bach or equiv in Comp Sci & 1 yr exp in job offd. Employer will accept deg equivalency based on combo of Education, training or exp in tech industry in lieu of Bach deg. Respond to: Mr. Mohammad N. Yaqoob, MY Management, 1741 S. Ruble St., Chicago, IL 60616. No calls.

Computer Support & Research Specialist: Design, coordinate activities of computer systems; formulate info for corporate decision making; collect & analyze data; train users, troubleshoot all hardware/software components. Bachelors/Equivalent in Comp. Sc./Engineering w/rel. exp. Resume to HR, Falcon Farms, Inc., 2330 NW 82nd Avenue, Miami, FL 33122.

SYSTEMS ANALYST, Atlanta, GA. Requires B.S. computer science and 2 years experience. Provide system analysis, implementation, maintenance and support using full life-cycle development, Legacy and client/server systems. Interested applicants please submit resume to Attn: HR Dept., Information Technology Resources, 1355 Peachtree St., NE, Suite 110, Atlanta, GA 30309.

OH ins. co. seeks Systems Analyst to assist in preparing detailed technical specs, design code, test, debug docs. & maintain programs for automated business systems. Min req: Bachelor's in Engineering or eqv. & 3 mos. in job or job related exp. including: XML, UML, Visio, VSS, JavaScript, SQL server, J2EE, EJB, WSAD, VisualAge, Oracle, CFML. Resumes to: JK-T64A135, 300 N Commons Blvd., Mayfield Village, OH 44143. No calls. EOE.

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Non-profit S/W org in SF looking for S/W Dev Mgr to hire/direct S/W Release and QA teams; install & administer web apps; integrate crypt srvcs to enable secure storage & xchange of information; ensure corp s/w security by utilizing s/w dev methods and best practices to protect against programming errors & hacker activity; enhance s/w dev processes and tools. Req: MS or equiv + 3 yrs in s/w dev/mngt. Exp in lrg scale s/w dev projects; OO s/w dev; C & C++, Perl, open source projects; mass market, client/desktop apps dev; x-platform dev exp (Linus, Mac OS X, Windows); installing and managing LXR & Bonsai. Send res to: devmngr-job@osafoundation.org

Need IT Professionals like Software Engineers, Programmer Analysts, IT Business Managers for company based in Bristol, PA. MS/BS Degree or equivalent in C.S, CIS, MIS, Engg (any), Math, Phy. / rel field and/or rel. work exp. All positions may involve travel &/or relocation to project sites throughout the U.S. Mail resumes to HR at Surya Systems Inc., 1200 New Rodgers Road, C 7A, Bristol, PA 19007. State the post applied for.

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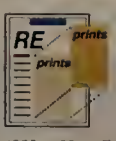

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FDA

continued from page 1

(FDA) to put pressure on manufacturers, which by law must authorize the patch after testing it to see if it might have a negative impact on the medical application.

In turn, manufacturers have put the blame on hospitals, saying they have to do a better job with security, such as including internal firewalls and intrusion-prevention systems.

Last week, FDA Deputy Director Brian Fitzgerald outlined three initiatives to improve a deteriorating security situation.

Speaking at the annual IT Conference organized by the Department of Veterans Affairs (VA), he said the agency won't tolerate medical-device manufacturers failing to keep equipment up to date with security patches.

As a penalty, Fitzgerald said, the FDA will withhold regulatory approval on equipment submitted by manufacturers deemed to have a bad track record on patching. "They won't be able to have certification for new devices," he said.

This get-tough approach, which will go out in a guidance letter, represents a sharpening in enforcement of FDA regulations Section 510(k) and 518. Those rules give the FDA power to set baselines for safety and security.

The FDA also has planned two new efforts to improve security of medical equipment. Guidelines to be issued in the next six months will detail how the FDA expects device manufacturers to be building and testing "networkable, networthy medical devices," Fitzgerald said.

Largely inspired by the Air Force medical-device evaluation program launched last fall that's intended to keep unpatched medical equipment off Air Force networks, the FDA technical guide will be aimed at helping manufacturers achieve "technical excellence," Fitzgerald said.

The Air Force requires device manufacturers to test Windows, Unix, Oracle and other applications, and adhere to a regimen of responding to patching requirements based on security bulletins.

The third FDA regulatory effort will involve the FDA setting up forensics capability to examine devices infected by computer worms or other malware and track down the culprits. In addition, the FDA will create an investigative arm.

This idea evoked skepticism.

"Why would the FDA want to create their own G-men when there are already a bunch of experts at the FBI at work?" asked Steve Wexler, biomedical engineer at the VA who helped the VA's network staff design security for medical equipment at VA hospitals. "If someone wants to poison a medical device, that's a criminal act the FBI should be involved in."

Wexler is gung-ho on the FDA's other ideas.

"The more information we can share on the existing regulations and how to apply them is great for everybody," he said.

Conference speakers talked of the growing security threat.

"As medical devices are networked, threat sources are expanded, endangering all systems attached to the network, including healthcare partners, hospital information infrastructures, patient data and applications," Kenneth Kizer, CEO of the National Quality Forum, said.

Kizer described a list of problems, ranging from anti-virus software installed by an end user on a GE Medical Systems devices that crashed it, taking days to restore, to the Blaster worm infecting Kodak Imaging Systems radiography servers.

In addition, Kizer said there is the problem of the insider threat, such as the case of Christopher Scott Sandusky, who two years ago admitted to unlawfully accessing the network of a Las Vegas firm, Steinberg Diagnostic Medical Imaging, and locking the employees out of their own system. The computer consulting company that helped set up the Steinberg medical imaging system had fired Sandusky.

National Quality Forum plans to hold meetings with industry representatives to address the range of problems, he said.

Ultimately, hospitals and manufacturers have to take steps to do what they can to minimize security risks, several VA officials said.

The VA has established what it calls the Health Information Security Division (HISD) in Martinsburg, W.Va., to test medical equipment based on commercial off-the-shelf products. HISD is working with the Department of Defense to publish a set of guidelines early next year for assessing medical equipment.

Hal Haislip, WAN manager for the VA's Integrated Service network in Little Rock, Ark., said the VA tries to make sure unnecessary software features in both Windows- and Unix-based medical equipment is either turned off or removed.

"If you look at Unix devices, there is a default mode that enables telnet, ftp and sendmail. We are trying to get these unused services locked down and turned off, so when the device comes to you it will have fewer vulnerabilities," he said.

"A CT scanner doesn't need a mail client," Wexler noted. "That's what's getting patched." ■

FDA medical device security policy

The Food and Drug Administration promises to take these actions designed to ensure the security of medical devices.

- Issue guidance reminding manufacturers that the FDA will take regulatory action if they don't patch devices and lock down unnecessary medical programs.
- Set minimum standards for the networking of medical devices.
- Establish forensic capabilities that would let the FDA investigate breaches and compromises of medical equipment, and coordinate with law enforcement.

Vanquish fights the economics of spam

■ BY CARA GARRETSON

Vanquish plans to halt unwanted e-mail messages by making spammers pay, but critics of this system say it requires widespread adoption to be effective.

The company sells e-mail software backed by a service that implements its bonded e-mail program. When Vanquish senders — confident that recipients of their e-mails won't view them as spam — post a bond with the company, their messages carry a button that lets recipients report the e-mail to Vanquish as spam, and extract a small fee for doing so. In September, the company will let ISPs and corporations detect incoming e-mail carrying Vanquish's seal that certifies the sender has posted a bond by purchasing the company's new server appliance or hosted service.

The idea behind the system is e-mailers should be so sure that recipients want to read their messages that they'll put money on it, therefore weeding out spammers and giving legitimate commercial e-mailers a way to ensure their message gets through, says Vanquish CEO Philip Raymond. "The sender ought to know whether you want it or not; the key is forcing the sender to be the filter," he says.

Active Internet, an ISP with 5,000 customers, is testing the Vanquish system and intends on replacing its anti-spam filters with the system. "We like to get unsolicited e-mail, but we want it targeted to what we're interested in," says Active Internet's CEO Kenneth Slaughter. "Vanquish addresses that; it allows people to send you unsolicited e-mail, but they better know you're interested or they'll be penalized."

To prevent abuses of its system, Vanquish has developed a set of conditions that dictate when a recipient can report a message as spam. For example, if the recipient visited the sender's Web site and signed up to receive e-mail or has corresponded with the sender before, that sender can't be penalized. Recipients also only have 72 hours from when an e-mail was received to report it as spam by pressing a button embedded in the e-mail and usually pays the recipient 5 cents.

Yet competitors say such a system won't be effective unless widely used.

"Getting all the legitimate bulk senders of e-mail in the world to adopt it is an enormous assumption. . . . It's just unrealistic," says Andrew Lochart, director of product marketing with anti-spam service provider Postini, a competitor to Vanquish. "It's a tax on legitimate senders, and the whole idea is to be taxing the spammers."

Acknowledging that this bonded system won't reach its potential until it has attracted many users, Vanquish has included other anti-spam techniques with its product, such as a challenge-response feature and whitelists of authorized senders.

Although other companies such as IronPort have a bonded component to their blacklists, meaning e-mailers can put up a bond to be taken off IronPort's list of known spammers, Vanquish says it's unaware of another company offering a bond system for both senders and receivers.

The Vanquish server appliance or hosted service will cost organizations between 19 cents and 27 cents per user, per month, according to the company.

The company says bonds range in price, depending on whether the recipient has asked to receive e-mails from the sender and other factors. In the case where the sender is very confident the recipient is interested, a $5 bond would cover "tens of thousands of e-mails," Raymond says. ■

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SETI@Home

continued from page 1

So after expending 2 million years of accumulated CPU time and analyzing 50T bytes of data — are we alone?

"We still don't know the answer to the big question," says Dan Wertheimer, chief scientist for the SETI@Home project and the director of the Search for Extra Terrestrial Intelligence (SETI) program at UC Berkeley. "We haven't bugged any aliens yet."

But this wasn't a bummer to the world's top ET scientists, who congregated at Harvard University for last week's SETI Symposium. Dozens of astronomy Ph.D.s spent two days discussing strategies for detecting intelligent life in the universe.

"I'm optimistic that earthlings will find ETs in the long run," Wertheimer says, "But don't hold your breath."

With the one-in-a-billion odds of a SETI@Home PC finding an alien radio signal, many volunteers have turned the project into a kind of PC hot-rodding contest, where users soup up their machines in a race to produce the most work units — the chunks of radio waves distributed by SETI@Home to clients. The SETI@Home software also has become a tool for testing and benchmarking computer performance among IT professionals and some server vendors.

SETI@Home starts with Cornell University's Arecibo Observatory radio telescope in Puerto Rico — a dish three times the size of the new Olympic Stadium in Athens, Greece — which collects radio noise from distant stars. The data is recorded on tapes that are sent to Berkeley, where servers break them into chunks and make them available over the Internet. The 5 million PCs worldwide that have the SETI@Home screen-saver program installed can download chunks of signals and look for patterns in the noise. The processed work units are then sent back to Berkeley's SETI computer lab — a storage closet in the astronomy department where the servers are kept.

For SETI@Home users, when their PCs sleep, this screen saver searches for extraterrestrial radio waves.

SETI@Home's Web site keeps a leader board for the top work-unit workhorses. Statistics show individual performances and SETI@Home groups, which include corporations such as Boeing, Sun, HP and Cisco, and organizations such as Ohio University, the University of Leeds in England and the Tempe, Ariz., Union High School District.

"It's hard to say whether the main motivation for people running the program has more to do with scientific goals or with the competition for work units," says David Anderson, director of the SETI@Home project, who wrote the screen-saver software. "The competitive aspect, having the fastest computer on the block, is probably the main driving force."

Anderson says the most enthusiastic users tweak their computers' CPUs to squeeze out every megahertz of performance for processing work units.

The technique known as "overclocking" is used by many of the leaders on the SETI@Home scoreboard — most notably Overclockers UK, a group of British PC enthusiasts that runs a Web site for building super-fast PCs. Enormous computer cooling fans, special gels that dissipate heat on a CPU's surface and water cooling systems are among the items for sale on http://overclockers.co.uk.

According to the group's Web site, Overclockers UK's SETI@Home goal is "to wave the U.K. flag for all the world to see by reaching the top position and proving to the rest of the world that U.K. overclockers are indeed a force to be reckoned with."

SETI@Home's Anderson cautions that overclocking a PC can produce erroneous results on work units. That's why all work units are sent out twice, and the results compared, to ensure there are no errors. If the results of a work-unit pair are out of sync, both work units are cancelled and sent out again.

SETI@Home, at work

Some IT folks who run SETI@Home use it at work because it makes a great tool for testing the performance of new machines.

SETI@Home "is a very good [benchmark] of real server workloads," says Leon Parkhouse, director of technology at Drake Institute for Behavioral Medicine in Los Angeles. "If I'm putting together new systems and I want to know how quick they're going to run, I'll use SETI@Home."

Parkhouse, who has an interest in astronomy and science, started using SETI@Home three years ago on old machines he brought home from work — some Digital Alpha servers and a few late-model Pentium machines. He runs four computers in his basement dedicated to SETI@Home.

But Parkhouse doesn't use his main SETI@Home username on the work machines, however. "That would really affect my score," because the machines he runs at home are faster than most PCs in the office. He recently passed 5,000 work units, commonly seen as a milestone separating the curious user from dedicated enthusiast.

Pushing the grid envelope

With more than 70 teraflops of computer power, the SETI@Home project is one of the largest examples of grid computing.

Sun donated much of the hardware Anderson and his colleagues used to set up the grid system for distributing work units over the Internet.

"If someone were to write a history of grid computing, I think SETI@Home would be a big chapter," says Joerg Schwartz, senior program manager for external research at Sun.

"We thought the idea of introducing peer-to-peer computing — harvesting compute cycles otherwise not utilized for the advancement of science — was a good idea," Schwartz says. "The idea was new, and it inspired us to do a lot of things." Many of the architectural concepts behind Sun's JXTA programming language for peer-to-peer networking were inspired by SETI@Home, he adds.

Sun is also among the top 10 corporate work-unit producers, thanks to a large group of developers at Sun who use SETI@Home as an every-day screen saver. Also, a few Sun computer labs, where benchmarking is done and operating systems are "burned in" to hardware, use SETI@Home to give machines a CPU workout.

"You have to run something," Schwartz says, "so you might as well run SETI@Home."

The search for ET, and beyond

Some might think one of the world's largest supercomputers could be put to better use. SETI@Home's Anderson is working on that too.

"There are a whole bunch of areas where unlimited computing power would let you do the kind of science you couldn't do before," Anderson says. New software developed by Anderson called Berkeley Open Infrastructure for Network Computing (BOINC) lets users choose from several projects for devoting unused CPU cycles. Among some of the projects in development for BOINC are a program that evaluates the behavior of black holes. Closer to Earth, Climateprediction.net will use BOINC to crunch data on world temperatures to more accurately predict the weather.

But for those behind SETI@Home, finding ET is still paramount. "We're just beginning to comb the cosmic haystack," SETI@ Home's chief scientist Wertheimer says.

"Sun does not have an official position" on the existence of aliens, Sun's Schwartz says. "But wouldn't it be terrible if we were the only intelligent life forms in all of the universe?" ■

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Companies play nice in front of W3C

■ BY JOHN FONTANA

IBM, Microsoft, BEA Systems and newfound partners Sun and SAP last week submitted to a major standards body a protocol that will help accelerate the development of other standards for building secure and reliable Web services applications.

The submission of WS-Addressing to the World Wide Web Consortium (W3C) marks a cooling of standards battles between Sun and the IBM/Microsoft duo. Sun, Oracle, Iona Technologies and Nokia were developing a similar specification called WS-MessageDelivery, and the two efforts now will merge.

WS-Addressing is a foundation for a number of specifications that corporations are demanding for Web services, including those for security, reliable messaging, transport and process workflow.

"At each of those layers you need an addressing specification," says Karla Norsworthy, director of dynamic e-business technologies at IBM. "So we are developing a single specification that works across them all."

WS-Addressing ensures that as messages wind their way across firewalls, gateways, multiple Web services and transport technologies, that the sender and receiver are always known. WS-Addressing also can specify how, when or if a system must acknowledge that a message successfully has made another hop across its intended path.

Norsworthy says IBM and Microsoft are glad to have Sun join in because the broad support helps fuel momentum.

It also might help align other specification development efforts. Sun is leading development on a separate process workflow specification from the one that Microsoft and IBM proposed. There are also two competing specifications for reliable messaging.

Norsworthy says the WS-Addressing specification was submitted to the W3C because that group is focusing on infrastructure specifications, such as Simple Object Access Protocol. IBM and Microsoft have submitted network specifications such as WS-Security to the Organization for the Advancement of Structured Information Standards. ■

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BackSpin Mark Gibbs

Leashing the dogs of law

After last week's BackSpin about lawyers shutting down Napster and 321 Studios there was a surge in feedback. Or rather, a surge in lawyer jokes. There were some very good jokes along with a surprising number that can't be printed in a nice, family oriented journal such as this. My (clean) favorite is:

The devil visited a lawyer's office and made him an offer: "I'll increase your income fivefold, make your partners love you, your clients respect you, ensure you have four months of vacation and let you live to be 100. All I require in return is that your wife's soul, your children's souls and their children's souls rot in hell for eternity." The lawyer thought for a moment and then asked, "What's the catch?"

I also received this one from reader Rich Gierman. Question: How many lawyer jokes are there really? Answer: Only 2, the rest are true stories.

Anyway, before any lawyers start sending letters to me, let me quote reader Steve Goldman: "Blaming the lawyers for this is silly. It is the policies of the corporate entities that employ the lawyers and lobby on behalf of laws like the Digital Millennium Copyright Act that are the issue. What you're doing is akin to blaming your car for running the red light. If their ethics are questionable, what do you say about the ethics of folks who hire them?"

An excellent point. The lawyers don't unilaterally decide to create an intimidating environment; the corporate executives are the ones who "pull the trigger."

Once the trigger is pulled the lawyers are in the business of gaming the system on behalf of their masters and, as can be seen from cases like 321 Studios and Napster, they show no more compunction than their masters about doing whatever it takes to win.

So in the case of the fall of 321 Studios it was the likes of Jack Valenti, the outgoing president and CEO of the Motion Picture Association of America and the Motion Picture Association and his staff who pulled the trigger.

Taken to its logical conclusion, the problem of responsibility could be considered to lie with the shareholders. They have the power to demand that the executives who hire the lawyers exercise common sense and manage the work of their legal dogs such that they behave in a more public and socially spirited way. But alas, the shareholders don't care.

Ultimately, the problem is cultural. We have few "deep" public business ethics beyond those enshrined in law and those that constitute traditional "values."

In America we prize competition but we have developed a raw and inhumane version of the free-market philosophy. Our version is one that lets the richest players wreak havoc on anyone they please for whatever reason they choose, while we all look the other way and pretend we have a level playing field.

We seem to have lost sight that when it comes to technology there is a real danger that creativity and risk-taking — the behaviors that drive the market — can be completely squashed when those with extreme economic and political power can get their way simply because they can.

Combine this kind of bullying with the ridiculous mess of the patent office allowing patents on processes such as Amazon's "One Click," and what do you get? A real danger that lawyers driven by rapacious executives like Valenti will kill off small companies such as 321, dampening the vibrancy that we associate with the technology sector and, as a consequence, affecting our overall economy.

We're all guilty. You, yes, you, personally need to stand up and be counted. You need to exercise your voice and tell the government, the companies you invest in and the organizations you work for that ethics and fair play matter.

Cries of "Count me in" to backspin@gibbs.com.

'NetBuzz News, insights, opinions and oddities

By Paul McNamara

E-mail's declining value

Here's how rotten phishing has gotten for those brand-name companies that are most targeted: Some are promising their customers that they will never, ever ask them a question of any kind in an e-mail, meaning there would never, ever be any reason for the customer to volunteer any personal information in response. No questions, no answers, no phishing victims, or so the theory goes — it isn't quite that simple.

One credit card company went so far as to toss the baby out with the bath water — it pulled the plug on customer-bound e-mail altogether — a moratorium that since has been rescinded but nonetheless should sound alarms.

These unsettling stories come from secure e-mail vendor PostX, whose executives care dearly about phishing because the future of their company depends on the survival of e-mail as a trustworthy communications channel between major companies and their customers. As unthinkable as the notion might be to some, that survival is not guaranteed as long as the phishing epidemic remains out of control.

"We just want this problem to go away," laments Cayce Ullman, who recently was bumped up from PostX CTO to CEO. In an effort to hasten the problem's departure, PostX helped launch the Trusted Electronics Communications Forum, one of a handful of organizations — including the Anti-Phishing Working Group and the Online Identity Theft Coalition — working to thwart the scam artists.

"Part of the problem is that if you start to have these rules around e-mail — we'll never ask you a question; we'll never drive you to our Web site — that also starts to decrease the value of the e-mail you're sending," Ullman says. "E-mail is the killer app, and for organizations to lose their ability to use it — use it at all, or with links in it, or questions — greatly diminishes its power."

In the short term, heightened worries about phishing might draw customer attention to providers of secure messaging products such as PostX. The problem is long-term.

"PostX is really concerned about phishing because the majority of our business is based on selling things like [secure electronic] statements and secure messaging," Ullman says. "So if the e-mail channel becomes dirty or unsafe or noisy that's a huge problem."

The rush to devise anti-phishing strategies has brought with it unintended consequences. Scott Olechowski, vice president of product strategy at PostX, tells the story of a banking industry customer that wanted to extend its use of PostX Envelope from commercial accounts to consumers.

"They realized they had a policy they published that said we'll never send you an e-mail that asks you any questions. And one of the questions that a [PostX] Envelope is going to ask you is your password," Olechowski says. "So they had a policy that prevented them from deploying this to their retail customers."

Moreover, such corporate e-mail policies are of limited value in the first place, Ullman says.

"The problem with this [policy] approach is that an organization deciding they aren't going to send e-mail doesn't prevent a spoofer from sending e-mail to their customers," he says.

So what might help more? PostX has "a lightweight signing mechanism that we're going to put forward to the group that we believe is as good a solution as we've heard of," Ullman says, although the company is by no means married to its own idea.

"We want to have a solution that is open, free, non-proprietary and not encumbered by patents," he says. "We want buy-in from the actual [corporate] victims. And we want to have something together in six to nine months; it might not be the ultimate solution, but at least it will stop the hemorrhaging."

Not that I'm cool enough to be a fan, but I've wondered what the rock band Phish makes of all this. The address is buzz@nww.com.

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